

List of All Chemicals

P Citrus limon (Rutaceae)

Common name(s)

Lemon

How used

Food

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

| Chemical | Plant Part | Low PPM | High PPM | StdDev | *Reference |
|------------------|------------------------|---------|----------|--------|----------------------------|
| (E)-BETA-OCIMENE | Petiole | -- | 6.0 | | * |
| (Z)-BETA-OCIMENE | Petiole | -- | 3.5 | | * |
| 1,8-CINEOLE | Leaf Essent. Oil | 11000.0 | 50000.0 | -0.66 | Jim Duke's personal files. |

Activities (67)

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| (-)Chronotropic 87 nl/ml | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| (-)Inotropic 87 nl/ml | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| Acaricide LC100=6 uM | |
| Allelopathic | |
| Allergenic | |
| Anesthetic | |
| Anthelmintic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiacetylcholinesterase IC50=41 ug/ml | |
| Antiallergic | J. Food Hyg. Soc. Jap. 33(6): 569. |
| Antibacterial 50 ppm | |
| Antibronchitic | |
| Anticariogenic | |
| Anticatarrh | Martindale's 29th |
| Anticholinesterase IC50=50-70 | |
| Antifatigue | |
| Antihaltotic | American Health, 12(4): 17, 1993. |
| Antiinflammatory | |
| Antilaryngitic | |
| Antinociceptive | |
| Antipharyngitic | |
| Antiplaque | |
| Antirheumatic | |
| Antirhinitic | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antisinusitic | |
| Antispasmodic | |
| Antistaphylococcal 50 ppm | |
| Antitussive | |
| Antiulcer | |
| CNS-Stimulant | |
| Candidicide | |
| Carcinogenic | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Choleretic | |
| Convulsant | |
| Counterirritant | Martindale's 29th |
| Cytochrome-P450-Inducer | |
| Decongestant | |
| Degranulant 0.3 ul/ml | |

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| Edemagenic inj | |
| Expectorant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| FLavor FEMA 1-200 | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Gastroprotective | |
| Gram(+)icide | |
| Gram(-)icide | |
| Hepatotonic | |
| Herbicide IC50=78 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Hypotensive | |
| Inflammatory inj | |
| Insectifuge | |
| Irritant | Rinzler, C. A. 1990. <i>The Complete Book of Herbs, Spices and Condiments. Facts on File</i> , New York. 199 pp. |
| Myorelaxant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Nematicide | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp. |
| Neurotoxic | |
| P450-Inducer | |
| Pediculicide 2.3 x pyrethrin | |
| Perfume | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Rubefacient | Martindale's 29th |
| Secretagogue | |
| Sedative | |
| Spasmogenic | |
| Surfactant | |
| Testosterone-Hydroxylase-Inducer | |
| Transdermal | |
| Trichomonicide LD100=1,000 ug/ml | |

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|---|-------------------------|--------------------|-----|----------------------------|
| 1-HEXEN-3-OL | Petiole | -- | 2.0 | * |
| 2',4',5-TRIHYDROXY-FLAVONONE-7-O-BETA-D-GLUCOSYL-RHAMNOside | Pericarp | -- | -- | * |
| 2'-O-XYLOSYL-VITEXIN | Flower | -- | -- | * |
| 2-CARBOXYARABINITOL | Leaf | -- | -- | Jim Duke's personal files. |
| 2-DODECENAL | Petiole | -- | -- | * |
| 2-NONENAL | Petiole | -- | 1.0 | * |
| Activities (2) | | | | |
| Insectifuge | | Merck 11th Edition | | |
| Pesticide | | | | |
| 3',4',5-TRIHYDROXY-FLAVONE-7-O-BETA-D-RHAMNOside | Plant | -- | -- | * |
| 3',4',5-TRIHYDROXY-FLAVONE-7-O-BETA-D-RHAMNOside-GLUCOSIDE | Plant | -- | -- | * |
| 3',4',5-TRIHYDROXY-FLAVONONE-7-O-BETA-D-RHAMNOside | Plant | -- | -- | * |
| 3-(3',4',5'-TRIMETHOXY-PHENYL)-2-PROPYNYL-ACETATE | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 3-(3',4',5'-TRIMETHOXY-PHENYL)-2-PROPYNYL-PROPIONATE | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 3-(3',4',5'-TRIMETHOXY-PHENYL)-PROPYNYL-ACETATE | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 3-(3',4',5'-TRIMETHOXY-PHENYL)-PROPYNYL-PROPIONATE | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 3-(4-HYDROXY-3-METHOXY-PHENYL)-1- | Pericarp | -- | -- | Jim Duke's personal files. |

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| 3-HEXEN-1-OL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 4',5,7-TRIHYDROXY-3',6,8-TRIMETHOXY-FLAVONE-3-O-BETA-D-GLUCOSIDE | Plant | -- | -- | * |
| 4',5,7-TRIHYDROXY-3',8-DIMETHOXY-FLAVONE-3-O-BETA-D-GLUCOSIDE | Pericarp | -- | -- | * |
| 4',5,7-TRIHYDROXY-3',8-DIMETHOXY-FLAVONE-3-O-BETA-D-GLUCOSYL-RHAMNOSIDE | Pericarp | -- | -- | * |
| 4',5,7-TRIHYDROXY-FLAVONE-6,8-DI-C-GLUCOSIDE | Pericarp | -- | -- | * |
| 4',5,7-TRIHYDROXY-FLAVONE-6-O-BETA-D-RHAMNOSYL | Plant | -- | -- | * |
| 4',5,7-TRIHYDROXY-FLAVONE-8-O-BETA-D-RHAMNOSYL | Plant | -- | -- | * |
| 4',5,7-TRIHYDROXY-FLAVONE-8-O-BETA-D-RHAMNOSYL-GLUCOSIDE | Plant | -- | -- | * |
| 4',7-DIHYDROXY-3'-METHOXY-FLAVONONE-8-O-BETA-D-GLUCOSYL-RHAMNOSIDE | Pericarp | -- | -- | Jim Duke's personal files. |
| 4-(3-METHYL-2-BUTENOXY)-ACETOPHENONE | Pericarp | -- | -- | * |
| 5,7-DIMETHYOXYCOUMARIN | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 5-(2',3'-DIHYDROXY-3'-METHYL-BUTYL-OXY)-7-METHOXY-COUMARIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 5-(2',3'-EPOXY-3'-METHYL-BUTYL-OXY)-7-METHOXY-COUMARIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 5-(3'-METHYL-BUT-2'-ENYL-OXY)-7-METHOXY-COUMARIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 5-(3'-METHYL-BUT-2'-ENYL-OXY)-8-(2",3"-EPOXY-3"-METHYL-BUTYL-OXY)-PSORALEN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 5-(3'-METHYL-BUT-2'-ENYL-OXY)-8-(2',3'-DIHYDROXY-3'-METHYL-BUTYL-OXY)-PSORALEN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 5-GERANOXY-7-METHOXYCOUMARIN | Essential Oil | 603.0 | 630.0 | * |
| 5-GERANOXY-7-METHOXYSORALEN | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 5-GERANYL-OXY-7-METHOXY-COUMARIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 5-GERANYL-OXYSORALEN | Pericarp | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 5-ISOPENTENOXY-7-METHOXYCOUMARIN | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 6,7-DIMETHYOXYCOUMARIN | Bark | -- | 162.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 6-8-DI-C-GLUCOSYL-DIOSMETIN | Pericarp | -- | -- | Jim Duke's personal files. |
| 6-C-GLUCOSYL-DIOSMETIN | Pericarp | -- | -- | Jim Duke's personal files. |
| 7-(3'-METHYL-BUT-2'-ENYL-OXY)-COUMARIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 7-GLUCOSYL-APIGENIN | Flower | -- | -- | Jim Duke's personal files. |
| 7-PENTAHYDROXY-2',3',5,5'-PENTAHYDROXY-FLAVANONE-7-(6-O-ALPHA-L-RHAMNOSYL-BETA-D-GLUCOSIDE | Pericarp | -- | -- | * |
| 7-RHAMNO-GLUCOSYL-DIOSMETIN | Flower | -- | -- | * |

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|--------------------------------------|-------------------------|----|-------|--|
| 7-RHAMNO-GLUCOSYL-LUTEOLIN | Flower | -- | -- | * |
| 8-(7',8'-EPOXY-GERANYL-OXY)-PSORALEN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 8-C-GLUCOSYL-DIOSMETIN | Pericarp | -- | -- | Jim Duke's personal files. |
| 8-GERAN-OXYPSORALEN | Essential Oil | -- | 387.0 | Jim Duke's personal files. |
| 8-GERAN-OXYPSORALEN | Pericarp | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 8-GERANYL-OXY-5-METHOXY-PSORALEN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| 8-GERANYLOXYPSORALEN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| ACETIC-ACID | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

Activities (16)

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|---------------------------------|--|
| Acidulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp. |
| Antibacterial 5,000 ppm | |
| Antitotic | Martindale's 28th |
| Antisalmonella | |
| Antivaginitic 1-2% | |
| Expectorant | Martindale's 28th |
| Fungicide | Martindale's 29th |
| Keratogenic | |
| Mucolytic | Martindale's 29th |
| Osteolytic | |
| Perfumery FEMA 6,000-40,000 ppm | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Protisticide | Martindale's 29th |
| Spermicide | Martindale's 28th |
| Ulcerogenic | HerbalGram No. 20, page 9. |
| Verrucolytic | |

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| ADENOSINE | Pericarp | -- | -- | Jim Duke's personal files. |
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Activities (28)

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|----------------------------------|--|
| Analgesic | |
| Antiaggregant | |
| Antiarrhythmic | Merck 11th Edition |
| Antidiuretic | LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp. |
| Antiedotoxic 500 mg/kg ipr mus | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Antihypertensive | LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp. |
| Antiinsomniac | |
| Antilipolytic | |
| Antispasmodic | |
| Antitachycardic 50-250 ug/kg/ivn | Martindale's 29th |
| Anxiolytic | |
| Arteriodilator | |
| Glucagonogenic | LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp. |
| Hypocholesterolemic | LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp. |
| Hypoglycemic | |
| Hypotensive | LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp. |
| Immunomodulator | |
| Insulinic | |
| Laxative | |
| Lipolytic | LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp. |
| Myorelaxant | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |

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|---------------------------------------|---|--|-------|-------|--|--|
| PAF-Inhibitor | 0.024 ug/ml | | | | | |
| Pyrogenic hmn | 0.09 mg/kg ivn | Conradson, T. B. G., Dixon, C. M. S., Clarke, B., Barnes, P. J. 1987. Cardiovascular Effects of Infused Adenosine in Man: Potentiation by Dipyridamole. <i>Acta Physiol Scand</i> , 129(3): 387-391. | | | | |
| Respirastimulant | | Martindale's 29th | | | | |
| Secretomotor | | | | | | |
| Sedative | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | | |
| Vasodilator | | | | | | |
| | | | | | | |
| ALPHA,ALPHA-P-TRIMETHYLBENZYL-ALCOHOL | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
| ALPHA,ALPHA-P-TRIMETHYLBENZYL-ALCOHOL | Plant | -- | -- | * | | |
| ALPHA-AMINO-BUTYRIC-ACID | Plant | -- | -- | * | | |
| ALPHA-BERGAMOTENE | Essential Oil | -- | 250.0 | -1.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
| ALPHA-BERGAMOTENE | Petiole | -- | -- | * | | |
| ALPHA-COPAENE | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
| ALPHA-COPAENE | Petiole | -- | -- | * | | |
| ALPHA-CUBEBENE | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
| ALPHA-HUMULENE | Petiole | -- | 1.5 | * | | |
| | | | | | | |
| Activities (2) | | | | | | |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992. | | | | | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | | |
| | | | | | | |
| ALPHA-HUMULENE | Essential Oil | -- | 10.0 | -0.48 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
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| Activities (2) | | | | | | |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992. | | | | | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | | |
| | | | | | | |
| ALPHA-PHELLANDRENE | Petiole | -- | 2.0 | * | | |
| | | | | | | |
| Activities (11) | | | | | | |
| Antibacterial | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002,Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. | | | | | |
| Antistaphylococcic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002,Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. | | | | | |
| Dermal | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | | |
| Emetic | | | | | | |
| Flavor FEMA 10-130 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | | | |
| Fungicide | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. | | | | | |
| Insectiphile | Pakistan Encyclopedia Planta Medica. 1986. | | | | | |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | | |
| Laxative | | | | | | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | | |
| Pesticide | | | | | | |
| | | | | | | |
| ALPHA-PHELLANDRENE | Essential Oil | -- | 20.0 | -0.59 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
| | | | | | | |
| Activities (11) | | | | | | |
| Antibacterial | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002,Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. | | | | | |
| Antistaphylococcic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002,Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. | | | | | |
| Dermal | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. | | | | | |
| Emetic | | | | | | |
| Flavor FEMA 10-130 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | | | |
| Fungicide | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. | | | | | |
| Insectiphile | Pakistan Encyclopedia Planta Medica. 1986. | | | | | |

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| Laxative | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Pesticide | |

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|--------------|-------------------------|----|--------|-------|----------------------------|
| ALPHA-PINENE | Fruit Essent. Oil | -- | 7000.0 | -0.76 | Jim Duke's personal files. |
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Activities (28)

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|----------------------------------|---|
| Allelochemic | |
| Allergenic | |
| Antiacne | |
| Antibacterial | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | 500 mg/kg |
| Antipneumonic | |
| Antiseptic | |
| Antispasmodic | |
| Antistaphylococcic | |
| Antiviral | Economic & Medicinal Plant Research, 5: 195. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Coleoptophile | |
| Expectorant | Michael Castleman 1991. <i>The Healing Herbs.</i> Rodale Press, Emmaus, PA 436 pp. |
| FLavor FEMA 15-150 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide IC50=30 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insecticide 0.82 uM/fly | |
| Insectifuge 50 ppm | |
| Insectiphile | J. Stored. Prod. Res., 22:141, 1986. |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor IC50=0.087 uM | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Sedative | Lawrence Review of Natural Products, Jun-90. |
| Spasmogenic | |
| Tranquilizer | Lawrence Review of Natural Products, Jun-90. |
| Transdermal | |

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| ALPHA-PINENE | Pericarp | -- | -- | Jim Duke's personal files. |
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Activities (28)

| | |
|----------------------------------|---|
| Allelochemic | |
| Allergenic | |
| Antiacne | |
| Antibacterial | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | 500 mg/kg |
| Antipneumonic | |
| Antiseptic | |
| Antispasmodic | |
| Antistaphylococcic | |
| Antiviral | Economic & Medicinal Plant Research, 5: 195. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Coleoptophile | |
| Expectorant | Michael Castleman 1991. <i>The Healing Herbs.</i> Rodale Press, Emmaus, PA 436 pp. |
| FLavor FEMA 15-150 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide IC50=30 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insecticide 0.82 uM/fly | |
| Insectifuge 50 ppm | |
| Insectiphile | J. Stored. Prod. Res., 22:141, 1986. |
| Irritant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| P450-2B1-Inhibitor IC50=0.087 uM | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

Sedative Lawrence Review of Natural Products, Jun-90.

Spasmogenic

Tranquilizer Lawrence Review of Natural Products, Jun-90.

Transdermal

ALPHA-PINENE Petiole -- 90.0 *

Activities (28)

Allelochemical

Allergenic

Antiacne

Antibacterial

Antifeedant

Antiflu

Antiinflammatory 500 mg/kg

Antipneumonic

Antiseptic

Antispasmodic

Antistaphylococcic

Antiviral Economic & Medicinal Plant Research, 5: 195.

Cancer-Preventive

Coleoptophile

Expectorant

FLavor FEMA 15-150

Herbicide IC50=30 uM

Insecticide 0.82 uM/fly

Insectifuge 50 ppm

Insectiphile

Irritant J. Stored. Prod. Res., 22:141, 1986.

P450-2B1-Inhibitor IC50=0.087 uM

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Sedative Lawrence Review of Natural Products, Jun-90.

Spasmogenic

Tranquilizer Lawrence Review of Natural Products, Jun-90.

Transdermal

ALPHA-PINENE Essential 40.0 500.0 -0.56 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities (28)

Allelochemical

Allergenic

Antiacne

Antibacterial

Antifeedant

Antiflu

Antiinflammatory 500 mg/kg

Antipneumonic

Antiseptic

Antispasmodic

Antistaphylococcic

Antiviral Economic & Medicinal Plant Research, 5: 195.

Cancer-Preventive

Coleoptophile

Expectorant

FLavor FEMA 15-150

Herbicide IC50=30 uM

Insecticide 0.82 uM/fly

Insectifuge 50 ppm

Insectiphile

Irritant J. Stored. Prod. Res., 22:141, 1986.

P450-2B1-Inhibitor IC50=0.087 uM

Pesticide
Sedative
Spasmogenic
Tranquilizer
Transdermal

Lawrence Review of Natural Products, Jun-90.

Lawrence Review of Natural Products, Jun-90.

ALPHA-PINENE

Leaf
Essent.
Oil

500.0

2000.0

-0.74

Jim Duke's personal files.

Activities (28)

Allelochemic
Allergenic
Antiacne
Antibacterial
Antifeedant

Antiflu Economic & Medicinal Plant Research, 5: 195.

Antiinflammatory 500 mg/kg

Antipneumonic

Antiseptic

Antispasmodic

Antistaphylococcic

Antiviral Economic & Medicinal Plant Research, 5: 195.

Cancer-Preventive

Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Coleophophile

Expectorant

Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.

FLavor FEMA 15-150

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Herbicide IC50=30 uM

Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Insecticide 0.82 uM/fly

Insectifuge 50 ppm

Insectiphile J. Stored. Prod. Res., 22:141, 1986.

Irritant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

P450-2B1-Inhibitor IC50=0.087

uM

Perfumery

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Sedative

Lawrence Review of Natural Products, Jun-90.

Spasmogenic

Tranquilizer

Lawrence Review of Natural Products, Jun-90.

Transdermal

ALPHA-PINENE

Pericarp
Essent.
Oil

5000.0

14000.0

Jim Duke's personal files.

Activities (28)

Allelochemic
Allergenic
Antiacne
Antibacterial
Antifeedant

Antiflu Economic & Medicinal Plant Research, 5: 195.

Antiinflammatory 500 mg/kg

Antipneumonic

Antiseptic

Antispasmodic

Antistaphylococcic

Antiviral Economic & Medicinal Plant Research, 5: 195.

Cancer-Preventive

Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Coleophophile

Expectorant

Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.

FLavor FEMA 15-150

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Herbicide IC50=30 uM

Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Insecticide 0.82 uM/fly

Insectifuge 50 ppm

Insectiphile J. Stored. Prod. Res., 22:141, 1986.

P450-2B1-Inhibitor IC50=0.087
uM

| | |
|--------------|---|
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Sedative | Lawrence Review of Natural Products, Jun-90. |
| Spasmogenic | |
| Tranquilizer | Lawrence Review of Natural Products, Jun-90. |
| Transdermal | |

ALPHA-SINENSAL

| | | | |
|---------|----|----|---|
| Petiole | -- | -- | * |
|---------|----|----|---|

ALPHA-TERPINENE

| | | | |
|----------|----|----|----------------------------|
| Pericarp | -- | -- | Jim Duke's personal files. |
|----------|----|----|----------------------------|

Activities (13)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakujii Kenkyusho Nenpo, (20): 95-101.

Antiacylcholinesterase IC50=1.0 mM

Antinitrosaminic

Antispasmodic

FFlavor FEMA 1-40 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insecticide 0.86 uM/fly

Insectifuge

P450-2B1-Inhibitor IC50=0.76 uM

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Spasmogenic

ALPHA-TERPINENE

| | | | | |
|---------------|----|------|-------|--|
| Essential Oil | -- | 70.0 | -0.78 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------------|----|------|-------|--|

Activities (13)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakujii Kenkyusho Nenpo, (20): 95-101.

Antiacylcholinesterase IC50=1.0 mM

Antinitrosaminic

Antispasmodic

FFlavor FEMA 1-40 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insecticide 0.86 uM/fly

Insectifuge

P450-2B1-Inhibitor IC50=0.76 uM

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Spasmogenic

ALPHA-TERPINENE

| | | | |
|---------|----|-----|---|
| Petiole | -- | 8.0 | * |
|---------|----|-----|---|

Activities (13)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakujii Kenkyusho Nenpo, (20): 95-101.

Antiacylcholinesterase IC50=1.0 mM

Antinitrosaminic

Antispasmodic

FFlavor FEMA 1-40 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insecticide 0.86 uM/fly

Insectifuge

P450-2B1-Inhibitor IC50=0.76 uM

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

Spasmogenic

Activities (23)

| | |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne | |
| Antibacterial MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | |
| Antiproliferant | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | |
| FLavor FEMA 5-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insecticide 1.29 uM/fly | |
| Interleukin-6-Inhibitor | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary ED50=240 ug/g mus | |

Activities (23)

| | |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne | |
| Antibacterial MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | |
| Antiproliferant | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | |
| FLavor FEMA 5-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insecticide 1.29 uM/fly | |
| Interleukin-6-Inhibitor | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |

pp.

| | |
|------------------------|---|
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termicide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary | |
| ED50=240 ug/g mus | |

ALPHA-TERPINEOL

Pericarp -- -- Jim Duke's personal files.

Activities (23)

| | |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne | |
| Antibacterial MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | |
| Antiproliferant | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | |
| FLavor FEMA 5-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insecticide 1.29 uM/fly | |
| Interleukin-6 Inhibitor | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termicide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary | |
| ED50=240 ug/g mus | |

ALPHA-TERPINEOL

Petiole -- 32.0 *

Activities (23)

| | |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne | |
| Antibacterial MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | |
| Antiproliferant | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | |
| FLavor FEMA 5-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insecticide 1.29 uM/fly | |

Mosquitofuge >

Deet

| | |
|--------------------------|---|
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary | |
| ED50=240 ug/g mus | |

| | | | | | |
|-----------------|---------------|-----|------|-------|--|
| ALPHA-TERPINEOL | Essential Oil | 6.0 | 50.0 | -0.77 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|-----------------|---------------|-----|------|-------|--|

Activities (23)

| | |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacne | |
| Antibacterial MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticariogenic MIC=800-1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antiinflammatory | |
| Antiproliferant | |
| Antiseptic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cicatrizant ED50=240 ug/g mus | |
| FLavor FEMA 5-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insecticide 1.29 uM/fly | |
| Interleukin-6-Inhibitor | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Termiticide IC100=5 mg/g | |
| Transdermal | |
| Vulnerary | |
| ED50=240 ug/g mus | |

| | | | | | |
|---|---------------|--------|--------|------|--|
| ALPHA-TERPINYL-ACETATE | Petiole | -- | 0.1 | * | |
| ALPHA-TERPINYL-PROPIONATE | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| ALPHA-THUJENE | Petiole | -- | 20.0 | * | |
| ALPHA-THUJENE | Essential Oil | 16.0 | 40.0 | -0.4 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| APIGENIN-7-(6-O-ALPHA-RHAMNOSYL-BETA-GLUCOSIDE) | Pericarp | -- | -- | | Jim Duke's personal files. |
| APIGENIN-C-GLYCOSIDE | Plant | -- | -- | * | |
| ASCORBIC-ACID | Fruit | 5208.0 | 5566.0 | 0.06 | * |

Activities (112)

| | |
|----------------------|---|
| Acidulant FEMA 6,000 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
|----------------------|---|

| | |
|---|--|
| | resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Analgesic 5-10 g/day | |
| Angiotensin-Receptor-Blocker | |
| AntiAGE 2,000 mg/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| AntiCFS 500-1,000 mg | |
| AntiCTS 1,000 mg 3x/day | |
| AntiCrohn's 50-100 mg/day/orl/man | Martindale's 29th |
| AntiLyme 500-2,000 mg | |
| AntiRaynaud's 500 mg 1-2x/day | |
| Antiaggregant | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antianging 400 mg/day | |
| Antiallergic | |
| Antialzheimeran 2,000-6,000 mg/day | |
| Antiarthritic 0.2-1 g/day | |
| Antiasthmatic 1,000 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiatherosclerotic | |
| Antibacterial | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Anticataract 350 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Anticataract 400 mg/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Anticataract 1 g 3x/day | |
| Anticervicaldysplastic 1,000-2,000 mg/day | |
| Anticlimacteric 500-5,000 mg/day | |
| Anticold 1-2 g/man/day | |
| Antidecubitic 500 mg/man/2x/day | Martindale's 28th |
| Antidementia | |
| Antidepressant 2,000 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidiabetic | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antidote (Aluminum) | Economic & Medicinal Plant Research, 6: 189. |
| Antidote (Cadmium) | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antidote (Lead) | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antidote (Paraquat) | Martindale's 28th |
| Antieczemic 3.5-5 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiedemic 1 g/man/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiencephalitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiendometriotic 2,000 mg/day | |
| Antifatigue 500-1,000 mg | |
| Antifibrotic 1,000-2,000 mg | |
| Antigallstone 1,000-3,000 mg/day | |
| Antigastritic | |
| Antigingivitic | |
| Antiglaucomic 2 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antihangover 1,000 mg | |
| Antihemorrhagic 1 g/man/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antihepatitic 2-6 g/man/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antihepatotoxic | Economic & Medicinal Plant Research, 6: 189. |
| Antiherpetic 1-5 g/day | |
| Antihistaminic 2 g/day orl man | |
| Antihypertensive | |
| Antiinfertility 1 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiinflammatory | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antilepric 1.5 g/man/day | Martindale's 28th |
| Antilithic 1,000-3,000 mg/day | |
| Antimaculitic | |
| Antimeasles | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antimenopausal 500-5,000 mg/day | |
| Antimigraine | Martindale's 29th |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antineuramidase | |
| Antinitrosic 1 g/man/day | Martindale's 28th |
| Antiobesity 1 g 3x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |

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|--|--|
| Antiosteоarthritic 1 g 2x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antiosteoporotic 500 mg/day | |
| Antioxidant 100 ppm | |
| Antiparkinsonian 1 g 2-3x/day | |
| Antiparotitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiperiodontic 1 g 2x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antipseudomonic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antipodriac | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antipoliomyelic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antipyretic | Economic & Medicinal Plant Research, 6: 189. |
| Antiradicular | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiretinotic | |
| Antirheumatic | |
| Antirhinitic 1,000 mg 3x/day | |
| Antiscorbutic 10 mg/man/day | Martindale's 28th |
| Antiseptic MIC=3.3-217 mg/ml | Martindale's 28th |
| Antiseptic 4-8 g/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antishingles | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antispasmodic 500-5,000 mg/day | |
| Antistress 500-1,000 mg | |
| Antisyndrome-X 1-4 g/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antitumor (Gastric) | |
| Antitumor (Lung) | |
| Antiulcer | |
| Antiviral 1-5 g/day | |
| Apoptotic 1-10 mM | |
| Asthma-preventive 1,000 mg/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Beta-Adrenergic Receptor Blocker | |
| Beta-Glucuronidase-Inhibitor 1.5 g/day/man | |
| Calcium-Antagonist | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardioprotective | |
| Cold-preventive 1-2 g/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Collagenic | |
| Detoxicant | |
| Diuretic 700 mg/man/orl | |
| Fistula-Preventive | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Hypocholesterolemic 300-1,000 mg/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Hypoglycemic | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Hypotensive 1,000 mg/man/day | |
| Immunomodulator | |
| Immunostimulant | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Interferonogenic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Lithogenic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Mucolytic 1 g/woman/day | Martindale's 28th |
| Pesticide | |
| Uricosuric 4 g/man/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Urinary-Acidulant | Martindale's 29th |
| Vasodilator | |
| Vulnerary | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

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|---------------|----------------|----|----|----------------------------|
| ASCORBIC-ACID | Fruit Juice | -- | -- | Jim Duke's personal files. |
|---------------|----------------|----|----|----------------------------|

Activities (112)

| | |
|------------------------------|--|
| Acidulant FEMA 6,000 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry |
| Aldose-Reductase-Inhibitor | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Analgesic 5-10 g/day | |
| Angiotensin-Receptor-Blocker | |
| AntiAGE 2,000 mg/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |

| | |
|---|--|
| AntiCTS 1,000 mg 3x/day | |
| AntiCrohn's 50-100 mg/day/orl/man | Martindale's 29th |
| AntiLyme 500-2,000 mg | |
| AntiRaynaud's 500 mg 1-2x/day | |
| Antiaggregant | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiaging 400 mg/day | |
| Antiallergic | |
| Antialzheimeran 2,000-6,000 mg/day | |
| Antiarthritic 0.2-1 g/day | |
| Antiasthmatic 1,000 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antiatherosclerotic | |
| Antibacterial | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Anticataract 350 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Anticataract 400 mg/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Anticataract 1 g 3x/day | |
| Anticervicaldysplastic 1,000-2,000 mg/day | |
| Anticlimacteric 500-5,000 mg/day | |
| Anticold 1-2 g/man/day | |
| Antidecubitic 500 mg/man/2x/day | Martindale's 28th |
| Antidementia | |
| Antidepressant 2,000 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antidiabetic | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antidote (Aluminum) | Economic & Medicinal Plant Research, 6: 189. |
| Antidote (Cadmium) | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antidote (Lead) | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antidote (Paraquat) | Martindale's 28th |
| Antieczemic 3.5-5 g/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antiedemic 1 g/man/day | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antiencephalitic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antiendometriotic 2,000 mg/day | |
| Antifatigue 500-1,000 mg | |
| Antifibrotic 1,000-2,000 mg | |
| Antigallstone 1,000-3,000 mg/day | |
| Antigastritic | |
| Antigingivitic | |
| Antiglaucomic 2 g/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antihangover 1,000 mg | |
| Antihemorrhagic 1 g/man/day | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antihepatitic 2-6 g/man/day | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antihepatotoxic | Economic & Medicinal Plant Research, 6: 189. |
| Antiherpetic 1-5 g/day | |
| Antihistaminic 2 g/day orl man | |
| Antihypertensive | |
| Antiinfertility 1 g/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antiinflammatory | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antileptic 1.5 g/man/day | Martindale's 28th |
| Antilithic 1,000-3,000 mg/day | |
| Antimaculitic | |
| Antimeasles | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antimenopausal 500-5,000 mg/day | |
| Antimigraine | Martindale's 29th |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antineuramidase | |
| Antinitroscopic 1 g/man/day | Martindale's 28th |
| Antiobesity 1 g 3x/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antiorchitic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antiosteоarthritic 1 g 2x/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antiosteoporotic 500 mg/day | |
| Antioxidant 100 ppm | |
| Antiparkinsonian 1 g 2-3x/day | |

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| Antiperiodontitic 1 g 2x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antipneumonic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antipodriac | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antipoliomyelic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antipyretic | Economic & Medicinal Plant Research, 6: 189. |
| Antiradicular | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiretinotic | |
| Antirheumatic | |
| Antirhinitic 1,000 mg 3x/day | |
| Antiscorbutic 10 mg/man/day | Martindale's 28th |
| Antiseptic MIC=3.3-217 mg/ml | Martindale's 28th |
| Antiseptic 4-8 g/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antishingles | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antispasmodic 500-5,000 mg/day | |
| Antistress 500-1,000 mg | |
| Antisyndrome-X 1-4 g/day | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antitumor (Gastric) | |
| Antitumor (Lung) | |
| Antiulcer | |
| Antiviral 1-5 g/day | |
| Apoptotic 1-10 mM | |
| Asthma-preventive 1,000 mg/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Beta-Adrenergic Receptor Blocker | |
| Beta-Glucuronidase-Inhibitor 1.5 g/day/man | |
| Calcium-Antagonist | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardioprotective | |
| Cold-preventive 1-2 g/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Collagenic | |
| Detoxicant | |
| Diuretic 700 mg/man/orl | |
| Fistula-Preventive | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Hypocholesterolemic 300-1,000 mg/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Hypoglycemic | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Hypotensive 1,000 mg/man/day | |
| Immunomodulator | |
| Immunostimulant | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Interferonogenic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Lithogenic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Mucolytic 1 g/woman/day | Martindale's 28th |
| Pesticide | |
| Uricosuric 4 g/man/day | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Urinary-Acidulant | Martindale's 29th |
| Vasodilator | |
| Vulnerary | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

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|----------|-------------------------|----|---------|-------|---|
| ASH | Fruit | -- | 28000.0 | -0.74 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| AURAPten | Fruit Essent. Oil | -- | -- | | Jim Duke's personal files. |

Activities (2)

Antiaggregant EC100=50 uM
Antispasmodic

| | | | | |
|------------------------------------|--|----|----|---|
| AUREUSIDIN | Plant | -- | -- | * |
| Iodothyronine-Deiodinase-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |

| | | | | |
|------------------------------|---------------|------|-------|----------------------------|
| AUREUSIDIN-6-GLUCOSIDE | Plant | -- | -- | * |
| AUREUSIDIN-6-RHAMNOGLUCOSIDE | Plant | -- | -- | * |
| BERGAMOTENE | Essential Oil | 16.0 | 40.0 | * |
| BERGAMOTTIN | Essential Oil | -- | 649.0 | Jim Duke's personal files. |

Activities (2)

Calcium-Antagonist 20 ug/ml gpg

Cytochrome-P450-Inhibitor

| | | | | |
|-------------|-------------------------|----|----|----------------------------|
| BERGAMOTTIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
|-------------|-------------------------|----|----|----------------------------|

Activities (2)

Calcium-Antagonist 20 ug/ml gpg

Cytochrome-P450-Inhibitor

| | | | | |
|-----------|-------|----|----|----------------------------|
| BERGAPTEN | Plant | -- | -- | Jim Duke's personal files. |
|-----------|-------|----|----|----------------------------|

Activities (26)

Antiaggregant

Antiapertif

Anticonvulsant

Antihistaminic 25 mg/kg ipr
mus

Antiinflammatory

Antijet-lag Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.

Antileukodermic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.

Antiplatelet

Antipsoriac

Antispasmodic

Antitumor

CNS-Depressant Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.

Calcium-Antagonist

Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.

Carcinogenic

Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Clastogenic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

DME-Inhibitor IC50=96 uM Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.

Hypotensive

Insecticide

Lipolytic

Molluscicide

Mutagenic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Pesticide

Phototoxic

Piscicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

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|-----------|---------------|----|------|----------------------------|
| BERGAPTEN | Essential Oil | -- | 10.0 | Jim Duke's personal files. |
|-----------|---------------|----|------|----------------------------|

Activities (26)

Antiaggregant

Antiapertif

Anticonvulsant

Antihistaminic 25 mg/kg ipr
mus

Antiinflammatory

Antijet-lag Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.

Antileukodermic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost.

| | |
|------------------------------|---|
| Antimitotic 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Antiplatelet | |
| Antipsoriac | |
| Antispasmodic | |
| Antitumor | |
| CNS-Depressant | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Calcium-Antagonist | |
| Cancer-Preventive 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Carcinogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Clastogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| DME-Inhibitor IC50=96 uM | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Hypotensive | |
| Insecticide | |
| Lipolytic | |
| Molluscicide | |
| Mutagenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Phototoxic | |
| Piscicide | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

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|-----------|-------------------------|----------|----------------------------|
| BERGAPTEN | Fruit Essent. Oil | -- -- | Jim Duke's personal files. |
|-----------|-------------------------|----------|----------------------------|

Activities (26)

| | |
|---------------------------------|---|
| Antiaggregant | |
| Antiapertif | |
| Anticonvulsant | |
| Antihistaminic 25 mg/kg ipr mus | |
| Antiinflammatory | |
| Antijet-lag | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Antileukodermic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antimitotic 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Antiplatelet | |
| Antipsoriac | |
| Antispasmodic | |
| Antitumor | |
| CNS-Depressant | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Calcium-Antagonist | |
| Cancer-Preventive 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Carcinogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Clastogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| DME-Inhibitor IC50=96 uM | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Hypotensive | |
| Insecticide | |
| Lipolytic | |
| Molluscicide | |
| Mutagenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Phototoxic | |
| Piscicide | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

| | | | |
|------------------|------------------------|--------------|----------------------------|
| BETA-BERGAMOTENE | Leaf Essent. Oil | -- 8000.0 | Jim Duke's personal files. |
|------------------|------------------------|--------------|----------------------------|

| | | | |
|-----------------|---------|------------|---|
| BETA-BISABOLENE | Petiole | -- 25.0 | * |
|-----------------|---------|------------|---|

Activities (6)

| | |
|----------------|---|
| Abortifacient | |
| Antirhinoviral | Denver. C.V.. Jackson. P.. Loakes. D.M.. Ellis. M.R.. and Yound. D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger (<i>Zingiber officinale</i>). <i>Journal Dr. Duke's Phytochemical and Ethnobotanical Databases</i> Downloaded Wed Jan 25 13:29:57 EST 2017 |

| | |
|--------------------------|---|
| Antiulcer IC57=100 mg/kg | Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... Yakugaku Zasshi 112: 645-655 (1992). |
| Antiviral IC50=1,800? | Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger (<i>Zingiber officinale</i>). Journal of Natural Products, 57(5): 658-662, 1994. |
| Perfumery Stomachic | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|-----------------|------------------------|----|--------|-------|----------------------------|
| BETA-BISABOLENE | Leaf Essent. Oil | -- | 8000.0 | -0.45 | Jim Duke's personal files. |
|-----------------|------------------------|----|--------|-------|----------------------------|

Activities (6)

| | |
|----------------------------|---|
| Abortifacient | |
| Antirhinoviral IC50=1,800? | Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger (<i>Zingiber officinale</i>). Journal of Natural Products, 57(5): 658-662, 1994. |
| Antiulcer IC57=100 mg/kg | Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... Yakugaku Zasshi 112: 645-655 (1992). |
| Antiviral IC50=1,800? | Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger (<i>Zingiber officinale</i>). Journal of Natural Products, 57(5): 658-662, 1994. |
| Perfumery Stomachic | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|-----------------|---------------|------|-------|------|--|
| BETA-BISABOLENE | Essential Oil | 23.0 | 400.0 | -1.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|-----------------|---------------|------|-------|------|--|

Activities (6)

| | |
|----------------------------|---|
| Abortifacient | |
| Antirhinoviral IC50=1,800? | Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger (<i>Zingiber officinale</i>). Journal of Natural Products, 57(5): 658-662, 1994. |
| Antiulcer IC57=100 mg/kg | Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... Yakugaku Zasshi 112: 645-655 (1992). |
| Antiviral IC50=1,800? | Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger (<i>Zingiber officinale</i>). Journal of Natural Products, 57(5): 658-662, 1994. |
| Perfumery Stomachic | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|---------------|-------|----|-----|-------|---|
| BETA-CAROTENE | Fruit | -- | 2.0 | -0.15 | * |
|---------------|-------|----|-----|-------|---|

Activities (53)

| | |
|-----------------------------------|--|
| Allergenic | |
| Androgenic? | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| AntiPMS | |
| Antiacne | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiaging | |
| Antiarthritic | |
| Antiasthmatic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Anticancer | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Anticarcinomic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Anticervicaldysplastic | |
| Anticorony 50 mg/man/2 days | |
| Antihyperkeratotic | |
| Antiichthyotic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antileukoplakic | |
| Antilipoperoxidant IC71=50 ug/ml | |
| Antilupus 150 mg/man/day/2 mos | Martindale's 28th |
| Antimaculitic | |
| Antimastitic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antioxidant | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiozenic | |
| Antipapillomic | |
| Antiphotophobic 30-300 mg/man/day | Martindale's 29th |
| Antipyriasic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiporphyrin 30-300 mg/man/day | Martindale's 28th |
| Antiproliferant | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Antipsoriac | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiradicular | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antirheumatic | |
| Antistress | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antitumor | Simon, P.W. Carrots and Other Horticultural Crops as a Source of Provitamin A Carotenes. HortScience, 25(12): 1495, 1990. |

| | |
|------------------------------------|--|
| Antitumor (CNS) IC43=45 ug/ml | |
| Antitumor (Colon) IC43=45 ug/ml | |
| Antitumor (Lung) IC30=60 ug/ml | |
| Antitumor (Prostate) | |
| Antitumor (Stomach) IC26=45 ug/ml | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiulcer 12 mg 3x/day/man/orl | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antiulcer 15,000-25,000 IU/day | |
| Antixerophthalmic | |
| COX-1-Inhibitor IC78=50 ug/ml | |
| COX-2-Inhibitor IC82=50 ug/ml | |
| Cancer-Preventive 22 ppm | Jim Duke's personal files. |
| Chemopreventive | |
| Colorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Gastroprotective | |
| Immunostimulant 180 mg/man/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Interferon-Synergist | |
| Mucogenic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Phagocytotic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Prooxidant 20 ug/g | |
| Thymoprotective | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Ubiquiot | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

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|--------------------|------------------------|-------|--------|-------|--|
| BETA-CARYOPHYLLENE | Leaf Essent. Oil | 100.0 | 3500.0 | -0.39 | Jim Duke's personal files. |
| BETA-CARYOPHYLLENE | Petiole | -- | 13.0 | * | |
| BETA-ELEMENE | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

Activities (5)

| | |
|---------------------|--|
| Anticancer (Cervix) | Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987. |
| Antigliomic | |
| Antiproliferant | |
| Antitumor (Cervix) | Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987. |
| Apoptotic | |

| | | | | | |
|-------------------|------------------|----|------|---|--|
| BETA-HUMULENE | Essential Oil | -- | 10.0 | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| BETA-PHELLANDRENE | Petiole | -- | 8.0 | * | |

Activities (3)

| | |
|-------------|--|
| Expectorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Fungicide | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| Perfumery | Merck 11th Edition |

| | | | | | |
|-------------------|------------------------|----|--------|-------|----------------------------|
| BETA-PHELLANDRENE | Leaf Essent. Oil | -- | 3300.0 | -0.64 | Jim Duke's personal files. |
|-------------------|------------------------|----|--------|-------|----------------------------|

Activities (3)

| | |
|-------------|--|
| Expectorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Fungicide | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| Perfumery | Merck 11th Edition |

| | | | | | |
|-------------------|----------------------------|----|---------|--|----------------------------|
| BETA-PHELLANDRENE | Pericarp Essent. Oil | -- | 65900.0 | | Jim Duke's personal files. |
|-------------------|----------------------------|----|---------|--|----------------------------|

Activities (3)

| | |
|-------------|--|
| Expectorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Fungicide | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| Perfumery | Merck 11th Edition |

Activities (3)

| | |
|-------------|---|
| Expectorant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Fungicide | Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp.</i> Springer-Verlag, Berlin. |
| Perfumery | Merck 11th Edition |

BETA-PINENE

Pericarp -- --

Jim Duke's personal files.

Activities (13)

| | |
|--------------------|---|
| Allergenic | |
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients 2nd Ed.</i> John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| Flavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

BETA-PINENE

Petiole -- 595.0

*

Activities (13)

| | |
|--------------------|---|
| Allergenic | |
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients 2nd Ed.</i> John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| Flavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

BETA-PINENEPericarp -- --
Essent.
Oil

Jim Duke's personal files.

Activities (13)

| | |
|--------------------|---|
| Allergenic | |
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients 2nd Ed.</i> John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| Flavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

BETA-PINENEEssential 40.0
Oil 1270.0 -0.7

*

Activities (13)

| | |
|--------------------|--|
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

| | | | | | |
|-------------|-------------------------|----|--------|------|----------------------------|
| BETA-PINENE | Fruit Essent. Oil | -- | 7000.0 | -0.7 | Jim Duke's personal files. |
|-------------|-------------------------|----|--------|------|----------------------------|

Activities (13)

| | |
|--------------------|--|
| Allergenic | |
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

| | | | | | |
|-------------|------------------------|----|--------|-------|----------------------------|
| BETA-PINENE | Leaf Essent. Oil | -- | 7000.0 | -0.69 | Jim Duke's personal files. |
|-------------|------------------------|----|--------|-------|----------------------------|

Activities (13)

| | |
|--------------------|--|
| Allergenic | |
| Antiinflammatory | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antispasmodic | |
| Candidicide | |
| FLavor FEMA 15-600 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Spasmogenic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Transdermal | |

| | | | | | |
|-----------------|---------|----|------|-------|--|
| BETA-SINENSAL | Petiole | -- | 1.5 | * | |
| BETA-SITOSTEROL | Fruit | -- | 80.0 | -0.69 | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) |

Activities (47)

| | |
|---------------------|---|
| Androgenic | |
| Angiogenic | |
| Anorexic | Martindale's 28th |
| Antidiemonic | Merck 11th Edition |
| Antiandrogenic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990. |
| Antibacterial | Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155. |
| Anticancer (Breast) | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. |

| | |
|--|--|
| Anticancer (Lung) | |
| Antiedemic IC54=320 mg/kg orl | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antiestrogenic | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Antifeedant | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antifertility | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antigonadotrophic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antihyperlipoproteinaemic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antiinflammatory | |
| Antileukemic | |
| Antilymphomtic | |
| Antimutagenic 250 ug/ml | |
| Antiofibidic 2.3 mg mus | Economic & Medicinal Plant Research, 5: 363. |
| Antioxidant IC44=10 uM | |
| Antiprogestational | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antiprostaglandin 30 mg/day/12 wks | |
| Antiprostatademonic | Merck 11th Edition |
| Antiprostatic 10-20 mg 3 x/day/orl man | |
| Antipyretic | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp. |
| Antitumor (Breast) | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103. |
| Antitumor (Cervix) | |
| Antitumor (Lung) | |
| Antiviral | Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991. |
| Apoptotic | |
| Artemicide LC50=110 ppm | Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> . 29(5): 1667-1670. 1990. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155. |
| Caspase-8-Inducer | |
| Estrogenic | |
| Febrifuge | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp. |
| Gonadotrophic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Hepatoprotective | |
| Hypocholesterolemic 2-6 g/man/day/orl | Martindale's 30th |
| Hypocholesterolemic 9-3,330 mg/man/day/orl | Martindale's 28th |
| Hypoglycemic | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989. |
| Hypolipidemic 2-6 g/day | |
| Pesticide | |
| Spermicide | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Ubiquit | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Ulcerogenic 500 mg/kg ipr rat | |

BETA-SITOSTEROL

Plant -- -- *

Activities (47)

| | |
|-------------------------------|--|
| Androgenic | |
| Angiogenic | |
| Anorexic | Martindale's 28th |
| Antiademonic | Merck 11th Edition |
| Antiandrogenic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antibacterial | Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155. |
| Anticancer (Breast) | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103. |
| Anticancer (Cervix) | |
| Anticancer (Lung) | |
| Antiedemic IC54=320 mg/kg orl | |
| Antiestrogenic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Antifertility | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antigonadotrophic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990. |
| Antihyperlipoproteinaemic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antiinflammatory | |
| Antileukemic | |

| | | | | |
|--|---|--|--|--|
| Antimutagenic 250 ug/ml | | | | |
| Antiophidic 2.3 mg mus | Economic & Medicinal Plant Research, 5: 363. | | | |
| Antioxidant IC44=10 uM | | | | |
| Antiprogestational | | | | |
| Antiprostaglandin 30 mg/day/12 wks | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990. | | | |
| Antiprostatadenomic | | | | |
| Antiprostatitic 10-20 mg 3 x/day/orl man | Merck 11th Edition | | | |
| Antipyretic | | | | |
| Antitumor (Breast) | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. | | | |
| Antitumor (Cervix) | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. | | | |
| Antitumor (Lung) | | | | |
| Antiviral | Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in Artemisia annua. Plant Science, 75: 161-165, 1991. | | | |
| Apoptotic | | | | |
| Artemicide LC50=110 ppm | Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. Phytochemistry, 29(5): 1667-1670, 1990. | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | |
| Candidicide | Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155. | | | |
| Caspase-8-Inducer | | | | |
| Estrogenic | | | | |
| Febrifuge | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. | | | |
| Gonadotrophic | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990. | | | |
| Hepatoprotective | | | | |
| Hypocholesterolemic 2-6 g/man/day/orl | Martindale's 30th | | | |
| Hypocholesterolemic 9-3,330 mg/man/day/orl | Martindale's 28th | | | |
| Hypoglycemic | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. Journal of Ethnopharmacology, 27: 243-275, 1989. | | | |
| Hypolipidemic 2-6 g/day | | | | |
| Pesticide | | | | |
| Spermicide | Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990. | | | |
| Ubiquiot | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Ulcerogenic 500 mg/kg ipr rat | | | | |

BRAYLIN Root -- -- Jim Duke's personal files.

BYAKANGELICIN Fruit -- -- Jim Duke's personal files.
Essent. Oil

Activities (5)

Antiestrogenic
Antigonadotropic =ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp

Antihistaminic 25 mg/kg ipr mus

Antilipogenic

Calcium-Antagonist

BYAKANGELICIN Essential -- 29.0 *
Oil

Activities (5)

Antiestrogenic
Antigonadotropic =ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp

Antihistaminic 25 mg/kg ipr mus

Antilipogenic

Calcium-Antagonist

BYAKANGELICOL Fruit -- -- Jim Duke's personal files.
Essent. Oil

BYAKANGELICOL Essential -- -- *
Oil

CADINENE Essential -- -- Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Oil

Activities (4)

| | |
|-----------------------|--|
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| FLavor FEMA 400-4,000 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Pesticide | |

CAFFEIC-ACID

Fruit 21.0 35.0 -0.33 *

Activities (102)

| | |
|--|---|
| Aldose-Reductase-Inhibitor 4 ug/ml (weak activity) | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110. |
| Allergenic | |
| Analgesic | |
| AntiHIV EC50=200 ug/ml | |
| AntiLegionella | |
| Antiadenoviral | Economic & Medicinal Plant Research, 5: 207. |
| Antiaggregant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antiaging | |
| Antiatherogenic | |
| Antibacterial | |
| Anticancer | |
| Anticarcinogenic | Economic & Medicinal Plant Research, 6: 189. |
| Antidepressant | |
| Antiedemic | Economic & Medicinal Plant Research, 6: 189. |
| Antielastase IC50=93 um/l | |
| Antielastase IC50=86 ug/ml (475 uM) | |
| Antiescherichic | |
| Antiflu | Economic & Medicinal Plant Research, 5: 207. |
| Antigonadotropic | Jim Duke's personal files. |
| Antihemolytic 25 uM | Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. |
| Antihepatoadenomic 200 ppm diet orl mus | |
| Antihepatotoxic | |
| Antiperitic 50 ug/ml | |
| Antiperitic EC50=>50 ug/ml | |
| Antihistaminic | |
| Antihypercholesterolemic | Economic & Medicinal Plant Research, 6: 189. |
| Antihyperthyroid | |
| Antiinflammatory | |
| Antileukemic | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antileukotriene | |
| Antimelanogenic | |
| Antimutagenic | Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18. |
| Antinitrosaminic | Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18. |
| Antiphidic | |
| Antioxidant 50 uM | |
| Antioxidant IC57=30 ppm | |
| Antioxidant 1/3 quercetin | |
| Antioxidant 30 mM | |
| Antioxidant 1.3 x Vit. E | |
| Antioxidant 1/2 BHA | |
| Antiperoxidant IC50=44 uM | Planta Medica, 57: A54, 1991. |
| Antiperoxidant IC35=200 ug/ml | |
| Antiperoxidant IC85=100 ug/ml | |
| Antiproliferant | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antiprostaglandin | |
| Antiradicular 10 uM | Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994. |
| Antiradicular 1/3 quercetin | |
| Antiradicular 30 mM | |
| Antiradicular IC50=32-35 uM | |
| Antiseptic | |
| Antispasmodic EC50=3.4-15 uM | Phytotherapy Research, 4: 73. |
| Antistaphylococcic | |

| | |
|---|--|
| Antisunburn | |
| Antithiamin | Phenolic Compounds in Food and Their Effects on Health, 69. |
| Antithyroid | Jim Duke's personal files. |
| Antitumor 200 ppm diet orl mus | |
| Antitumor (Skin) | |
| Antitumor-Promoter IC42=10 uM | Cancer Research, 48: 5941. |
| Antiulcerogenic | |
| Antivaccinia | Economic & Medicinal Plant Research, 5: 207. |
| Antiviral IC50=62.5 ug/ml | |
| Anxiolytic | |
| CNS-Active | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp. |
| COX-2-Inhibitor IC32=100 uM | |
| Calcium-Antagonist IC50=1.2 uM rbt | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI,</i> 1990, 399 pp. |
| Carcinogenic 2% (diet) | |
| Chemopreventive | |
| Cholagogue | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp. |
| Choleretic | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed.</i> , Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Clastogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Co-carcinogenic | |
| Collagen-Sparing | |
| Cytoprotective | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Cytotoxic TC50=200 ug/ml | |
| DNA-Active | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| DNA-Protective | |
| Diuretic | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp. |
| Fungicide MIC=0.4 mg/ml | |
| Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol) | |
| Hepatoprotective | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210. |
| Hepatotropic | |
| Histamine-Inhibitor | |
| Immunostimulant | |
| Insectifuge | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| Leukotriene-Inhibitor | |
| Lipoxygenase-Inhibitor IC27=5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690. |
| Lipoxygenase-Inhibitor IC50=62-148 uM | |
| Lyase-Inhibitor IC50=94-164 uM | |
| Metal-Chelator | McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.25. |
| Ornithine-Decarboxylase-Inhibitor | Hagerman, A.E. <i>Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19. |
| Pesticide | |
| Prooxidant | |
| Prostaglandigenic | |
| Sedative 500 mg | |
| Sunscreen IC50=2.5 mg/l | Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993. |
| Sunscreen IC91=5 mg/l | Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993. |
| Sunscreen IC98=25 mg/l | Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993. |
| Tumorigenic | Jim Duke's personal files. |
| Vulnerary | |
| Xanthine-Oxidase-Inhibitor IC50=39.21 uM | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy.</i> Churchill Livingston, Edinburgh. |

CAFFEINE

Flower -- 50.0 0.22 *

Activities (62)

| | |
|-----------------------|---|
| (+)-Inotropic | Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants.</i> 2nd Ed. Lavoisier Publishing, Paris. 1119 pp. |
| Adenosine-Antagonist | McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph. Alternative Therapies</i> , 6(3): 61-82. |
| Analeptic 200 scu mus | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook.</i> (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Analgesic-Synergist | |

| | |
|------------------------------------|--|
| Antia apoptotic | |
| Antiasthmatic 5-10 mg/kg orl/man | Martindale's 29th |
| Anticarcinogenic | |
| Anticariogenic | |
| Antidermatitic | Martindale's 29th |
| Antiemetic | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Antiflu | Economic & Medicinal Plant Research, 5: 198. |
| Antiherpetic | |
| Antihypotensive 250 mg/day/orl/man | Martindale's 29th |
| Antinarcotic | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Antiobesity | |
| Antioxidant | |
| Antirhinitic 140 mg/day/orl/man | Martindale's 29th |
| Antiserotonergic 40 ipr rat | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Antiserotonergic 40 scu rat | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Antitumor | |
| Antitumor (Lung) | |
| Antivaccinia | |
| Antiviral | Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart. |
| Apoptotic | |
| Arrhythmigenic 1,500 mg/man | |
| CNS-Stimulant 100 orl mus | |
| CNS-Stimulant 30 orl rat | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardiotonic 10-25 orl dog | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Cardiotonic 65-500 orl cat | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Catabolic | Abstract (See species file) |
| Choleretic | |
| Coronary-Dilator | McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82. |
| Diuretic | |
| Energizer 20-200 mg/man | |
| Ergotamine-Enhancer | Martindale's 29th |
| Flavor FEMA 125 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Herbicide | |
| Hypertensive | |
| Hypoglycemic | |
| Insecticide | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Lypolytic | Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp. |
| Myorelaxant | McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82. |
| Neurotoxic | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benficial Nature. The Risk of Herbal Preparations</i> . Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Pesticide | |
| Phosphodiesterase-Inhibitor | |
| Pyrogenic 60 mg/day oral hmn | Daroca, P., Rodriguez, J., Reano, M., Canto, G., Miranda, P. 1996. <i>Fever From Caffeine</i> . Allergy, 51(3): 189-191. |
| Pyrogenic 13.3 mg/kg ipr rbt | Dascombe, M. J. 1977. <i>Effects of Methylxanthine Drugs on Pyrogen-Induced Hyperthermia</i> . Eur J Pharmacol, 45: 389-392. |
| Pyrogenic 15 mg/kg ipr cat | Dascombe, M. J. 1977. <i>Effects of Methylxanthine Drugs on Pyrogen-Induced Hyperthermia</i> . Eur J Pharmacol, 45: 389-392. |
| Respirastimulant | |
| Spasmogenic 1,500 mg/man | |
| Stimulant | R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benficial Nature. The Risk of Herbal Preparations</i> . Anns. Intern. Med. 117(2):165-6; Huxtable, R. |
| Tachycardic 1,500 mg/man | |
| Teratogenic 14 orl rat | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Topoisomerase-I-Inhibitor 0.1 nM | Tohda, H., Zhao, J. H., Oikawa, A. 1992. <i>A Possible Involvement of DNA Topoisomerase I in 'Caffeine Effect' After Ultraviolet Irradiation</i> . Tohoku J Exp Med, 168: 129-132. |
| Topoisomerase-I-Inhibitor 75 uM | Shin, C. G., Strayer, J. M., Wani, M., Snapka, R. M. 1990. <i>Rapid Evaluation of Topoisomerase Inhibitors: Caffeine Inhibition of Topoisomerases in vivo</i> . Teratogen Carcinogen Mutagen, 10: 41-52. |
| Topoisomerase-II- | Shin, C. G., Strayer, J. M., Wani, M., Snapka, R. M. 1990. <i>Rapid Evaluation of Topoisomerase Inhibitors: Caffeine Inhibition of Topoisomerases in vivo</i> . |

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|----------------------------------|--|
| Vasodilator | Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp. |
| cAMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| cGMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |

| | | | | | |
|---------|-------|-------|--------|-------|---|
| CALCIUM | Fruit | 700.0 | 3227.0 | -0.15 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
|---------|-------|-------|--------|-------|---|

Activities (28)

| | |
|------------------------------------|--|
| AntiPMS 1 g/day | |
| Antiallergic 500 mg/day | |
| Antianxiety | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antiarrhythmic 500-1,500 mg | |
| Antiarthritic 1,000 mg/day | |
| Antiatherosclerotic 500 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Anticlimacteric 1,000-1,500 mg/day | |
| Antidepressant | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antidote (Aluminum) | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antidote (Lead) | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antihyperkinetic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antihypertensive | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antiinsomniac | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antimenopausal 1,000-1,500 mg/day | |
| Antioesity | |
| Antiosteoporotic 500-2,000 mg/day | |
| Antiperiodontitic 750 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antirheumatic 1,000 mg/day | |
| Antistress 500-1,500 mg/day | |
| Antitric | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Anxiolytic 500-1,500 mg/day | |
| Calcium-Channel-Blocker | |
| Diuretic | |
| Hypocholesterolemic 500 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Hypotensive 1 g/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Laxative 1,000-1,200 mg | |
| Tranquilizer 500-1,500 mg/day | |
| Vasodilator | |

| | | | | | |
|-------------|-------|----|------|-------|--|
| CAMPESTEROL | Fruit | -- | 20.0 | -0.49 | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. <i>CRC Handbook of Lipids in Human Nutrition</i> . CRC Press. Boca Raton, FL. 233 pp.) |
|-------------|-------|----|------|-------|--|

Activities (2)

| | |
|------------------------|--|
| Antioxidant IC37=10 uM | |
| Hypocholesterolemic | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |

| | | | | |
|------------|---------|----|-----|---|
| CAMPHENENE | Petiole | -- | 3.0 | * |
|------------|---------|----|-----|---|

Activities (9)

| | |
|----------------------|--|
| Allelopathic | Wright,C.W.(Ed)2002. <i>Medicinal&Aromatic Plants-Industrial Profiles</i> .Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antilithic? | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antioxidant | Jim Duke's personal files. |
| Expectorant | Hansel, R., Keller, K., Rimpler, H., and Schneider, G., eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| FLavor FEMA 15-175 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide | |
| Spasmogenic | Fitoterapia No.59-1984. |

| | | | | | |
|------------|---------------|-----|------|-------|--|
| CAMPHENENE | Essential Oil | 2.0 | 50.0 | -0.69 | Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980</i> . |
|------------|---------------|-----|------|-------|--|

Activities (9)

| | |
|--------------|--|
| Allelopathic | Wright,C.W.(Ed)2002. <i>Medicinal&Aromatic Plants-Industrial Profiles</i> .Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antilithic? | Jeffery B. Harborne and H. Baxter. eds. 1983. <i>Phvtochemical Dictionarv</i> . A Handbook of Bioactive Compounds from Plants. Taylor & Frost. London. 791 |

| | |
|----------------------|---|
| Antioxidant | Jim Duke's personal files. |
| Expectorant | Hansel, R., Keller, K., Rimpler, H., and Schneider, G., eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| FLavor FEMA 15-175 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide | |
| Spasmogenic | Fitoterapia No.59-1984. |

| | | | | |
|------------|------------------------|----|----|----------------------------|
| CAMPHENENE | Leaf Essent. Oil | -- | -- | Jim Duke's personal files. |
|------------|------------------------|----|----|----------------------------|

Activities (9)

| | |
|----------------------|--|
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles. <i>Artemisia</i> .344pp.Maffei,M.(Ed)2002. <i>Vetiveria</i> .The Genus <i>Vetiveria</i> .Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999. <i>Tea Tree</i> .The Genus <i>Melaleuca</i> .Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antilithic? | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antioxidant | Jim Duke's personal files. |
| Expectorant | Hansel, R., Keller, K., Rimpler, H., and Schneider, G., eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin. |
| FLavor FEMA 15-175 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hypocholesterolemic? | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide | |
| Spasmogenic | Fitoterapia No.59-1984. |

| | | | | | |
|---------------|-------|----------|----------|------|---|
| CARBOHYDRATES | Fruit | 111000.0 | 863000.0 | 0.43 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
|---------------|-------|----------|----------|------|---|

CARVEOL

| | | | | |
|--|---------|----|----|---|
| | Petiole | -- | -- | * |
|--|---------|----|----|---|

Activities (1)

| |
|---------------|
| CNS-Stimulant |
|---------------|

| | | | | |
|---------|---------------|----|----|----------------------------|
| CARVEOL | Essential Oil | -- | -- | Jim Duke's personal files. |
|---------|---------------|----|----|----------------------------|

Activities (1)

| |
|---------------|
| CNS-Stimulant |
|---------------|

| | | | | |
|---------|---------------|----|----|----------------------------|
| CARVONE | Essential Oil | -- | -- | Jim Duke's personal files. |
|---------|---------------|----|----|----------------------------|

Activities (19)

| | |
|--------------------------------|--|
| Allergenic | |
| Antiacyetylcholinesterase | |
| IC50=1.4-1.8 mM | |
| Antiproliferative | |
| Antiseptic 1.5 x phenol | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) |
| CNS-Stimulant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidistat | |
| Carminative | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994. |
| FLavor FEMA 80-3,000 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungistat | |
| Insecticide | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Pesticide | |
| Sedative | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Trichomonicide LD100=300 ug/ml | |
| Vermicide | |

Activities (31)

| | |
|---------------------------------|--|
| Aldose-Reductase-Inhibitor | |
| Allergenic | |
| Analgesic | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Antiacne | |
| Antiasthmatic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antibacterial | |
| Anticariogenic MIC=>1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antidermatitic | |
| Antiedemic | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antifeedant 500 ppm | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Antiinflammatory IC50=100 uM | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antileishmanic | |
| Antionychyotic | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Antiproliferant | |
| Antispasmodic | |
| Antistaphylococcic | |
| Antistreptococcic | |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992. |
| Antiulcer | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Candidicide | |
| Flavor FEMA 20-200 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Gastroprotective | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Insectifuge | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Larvicide | |
| Mosquitocide | |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | |
| Termitifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |

CARYOPHYLLENE

Leaf -- -- Jim Duke's personal files.
Essent. Oil

Activities (31)

| | |
|---------------------------------|--|
| Aldose-Reductase-Inhibitor | |
| Allergenic | |
| Analgesic | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Antiacne | |
| Antiasthmatic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antibacterial | |
| Anticariogenic MIC=>1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antidermatitic | |
| Antiedemic | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antifeedant 500 ppm | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Antiinflammatory IC50=100 uM | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990. |
| Antileishmanic | |
| Antionychyotic | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Antiproliferant | |
| Antispasmodic | |
| Antistaphylococcic | |
| Antistreptococcic | |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992. |
| Antiulcer | Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Candidicide | |

| | |
|------------------|--|
| Fungicide | |
| Gastroprotective | Taylor, Leslie. 2005. <i>The Healing Power of Rainforest Herbs</i> . SquareOne Publisher, Garden City Park, NY. 519 pp. |
| Insectifuge | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Larvicide | |
| Mosquitocide | |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | |
| Termitifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |

| | | | | | |
|---------------------|------------------------|-----|---------|------|----------------------------|
| CARYOPHYLLENE-OXIDE | Leaf Essent. Oil | 0.8 | 15600.0 | 1.32 | Jim Duke's personal files. |
|---------------------|------------------------|-----|---------|------|----------------------------|

Activities (8)

| | |
|--------------------|--|
| Antiedemic | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhuecema' (<i>Lavandula latifolia</i> Vill.)2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990. |
| Antifeedant | Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. <i>Insect Sci. Applic.</i> 14(1): 93-99, 1993. |
| Antiinflammatory | Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhuecema' (<i>Lavandula latifolia</i> Vill.)2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990. |
| Antitumor | Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (<i>Eugenia caryophyllata</i>) As Potential Anticarcinogenic Agents. <i>Journal of Natural Products</i> 55(7): 999-1003, 1992. |
| Calcium-Antagonist | |
| ED50=32 uM gpg | |
| Fungicide | |
| Insecticide | Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. <i>Insect Sci. Applic.</i> 14(1): 93-99, 1993. |
| Pesticide | |

CHLOROPHYLL-A

Leaf -- -- *

CHLOROPHYLL-B

Leaf -- -- *

CIS-LIMONENE-1,2-OXIDE

Essential Oil -- -- Jim Duke's personal files.

CITRAL

Essential Oil 250.0 300.0 -0.79 *

Activities (53)

| | |
|-------------------------|---|
| Allergenic | |
| Antiallergenic | |
| Antiallergic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antianaphylactic | |
| Antibacterial | |
| Anticancer | |
| Antihelicobacter | |
| Antiherpetic | |
| Antihistaminic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory | |
| Antileishmanic | |
| Antioxidant | |
| Antiseptic 5.2 x phenol | |
| Antishock | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antispasmodic | |
| Antitumor | |
| Antitumor (Colon) | |
| Antitumor (Liver) | |
| Antitumor (Skin) | |
| Antiulcer | |
| Antiviral | |
| Apoptotic | |
| Barbituate-Synergist | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Calcium-Antagonist | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Carcinogenic | |
| Caspase-3-Inducer | |
| Chemopreventive | |

| | |
|------------------------------------|--|
| Estrogenic | |
| Expectorant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| FLavor FEMA 4-170 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide MIC 625 ug/ml | |
| Glaucomagenic | |
| Glutathionigenic | |
| Herbicide IC50=115 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Myorelaxant 200 mg/kg | |
| NF-kB-Inhibitor | |
| NO-Inhibitor | |
| Nematicide IC52=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. |
| Nematicide MLC=100-260 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.19 uM | |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Prostatitigenic 185 mg/kg/day/3 ms | |
| Sedative ED 1-32 mg/kg | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) |
| Sedative 1 mg/kg | |
| Teratogenic | |
| Trichomonicide LD100=150 ug/ml | |
| Trypanocide | |
| Tyrosinase-Inhibitor ID50=1.5 mM | |
| Tyrosinase-Inhibitor ID50=1,500 uM | |

| | | | | |
|--------|----------|----|----|---|
| CITRAL | Pericarp | -- | -- | * |
|--------|----------|----|----|---|

Activities (53)

| | |
|-------------------------|---|
| Allergenic | |
| Antiallergenic | |
| Antiallergic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antianaphylactic | |
| Antibacterial | |
| Anticancer | |
| Antihelicobacter | |
| Antiherpetic | |
| Antihistaminic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory | |
| Antileishmanic | |
| Antioxidant | |
| Antiseptic 5.2 x phenol | |
| Antishock | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antispasmodic | |
| Antitumor | |
| Antitumor (Colon) | |
| Antitumor (Liver) | |
| Antitumor (Skin) | |
| Antiulcer | |
| Antiviral | |
| Apoptotic | |
| Barbituate-Synergist | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Calcium-Antagonist | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Carcinogenic | |
| Caspase-3-Inducer | |
| Chemopreventive | |
| Cytotoxic | |
| Estrogenic | |
| Expectorant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| FLavor FEMA 4-170 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide MIC 625 ug/ml | |
| Glaucomagenic | |
| Glutathionigenic | |

| | | | |
|------------------------------------|--|--|--|
| Myorelaxant 200 mg/kg | | | |
| NF-kB-Inhibitor | | | |
| NO-Inhibitor | | | |
| Nematicide IC52=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. | | |
| Nematicide MLC=100-260 ug/ml | Shoyakugaku Zasshi, 44: 183. | | |
| P450-2B1-Inhibitor IC50=1.19 uM | | | |
| Perfumery | Merck 11th Edition | | |
| Pesticide | | | |
| Prostatitigenic 185 mg/kg/day/3 ms | | | |
| Sedative ED 1-32 mg/kg | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) | | |
| Sedative 1 mg/kg | | | |
| Teratogenic | | | |
| Trichomonicide LD100=150 ug/ml | | | |
| Trypanocide | | | |
| Tyrosinase-Inhibitor ID50=1.5 mM | | | |
| Tyrosinase-Inhibitor ID50=1,500 uM | | | |

| | | | | |
|--------|-------------------------|----|--------|----------------------------|
| CITRAL | Fruit Essent. Oil | -- | 6000.0 | Jim Duke's personal files. |
|--------|-------------------------|----|--------|----------------------------|

Activities (53)

| | | | |
|------------------------------|--|--|--|
| Allergenic | | | |
| Antiallergenic | | | |
| Antiallergic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | |
| Antianaphylactic | | | |
| Antibacterial | | | |
| Anticancer | | | |
| Antiheicobacter | | | |
| Antiherpetic | | | |
| Antihistaminic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | |
| Antiinflammatory | | | |
| Antileishmanic | | | |
| Antioxidant | | | |
| Antiseptic 5.2 x phenol | | | |
| Antishock | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | |
| Antispasmodic | | | |
| Antitumor | | | |
| Antitumor (Colon) | | | |
| Antitumor (Liver) | | | |
| Antitumor (Skin) | | | |
| Antiulcer | | | |
| Antiviral | | | |
| Apoptotic | | | |
| Barbituate-Synergist | | | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | |
| Calcium-Antagonist | | | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | |
| Carcinogenic | | | |
| Caspase-3-Inducer | | | |
| Chemopreventive | | | |
| Cytotoxic | | | |
| Estrogenic | | | |
| Expectorant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | |
| FLavor FEMA 4-170 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | |
| Fungicide MIC 625 ug/ml | | | |
| Glaucomagenic | | | |
| Glutathionigenic | | | |
| Herbicide IC50=115 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. | | |
| Myorelaxant 200 mg/kg | | | |
| NF-kB-Inhibitor | | | |
| NO-Inhibitor | | | |
| Nematicide IC52=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. | | |
| Nematicide MLC=100-260 ug/ml | Shoyakugaku Zasshi, 44: 183. | | |

| | |
|------------------------------------|---|
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Prostatitigenic 185 mg/kg/day/3 ms | |
| Sedative ED 1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Sedative 1 mg/kg | |
| Teratogenic | |
| Trichomonicide LD100=150 ug/ml | |
| Trypanocide | |
| Tyrosinase-Inhibitor ID50=1.5 mM | |
| Tyrosinase-Inhibitor ID50=1,500 uM | |

| | | | | | |
|-------------|-------|----|---------|------|--|
| CITRIC-ACID | Fruit | -- | 59500.0 | 0.32 | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
|-------------|-------|----|---------|------|--|

Activities (23)

| | |
|-------------------------|--|
| Allergenic | |
| Alpha-Amylase-Inhibitor | |
| Antiaphthic 20,000 ppm | Martindale's 28th |
| Antiatherosclerotic | |
| Antibacterial | |
| Anticalculic | |
| Anticoagulant | Merck 11th Edition |
| Antileishmanic | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antioxidant Synergist | Merck 11th Edition |
| Antiseborrheic | |
| Antiseptic | Martindale's 29th |
| Antitubercular | |
| Antitumor | Economic & Medicinal Plant Research, 6: 235. |
| Disinfectant | Martindale's 29th |
| FLavor FEMA 370-4,400 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hemostat | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative? | Lawrence Review of Natural Products, Sep-91. |
| Litholytic | Martindale's 29th |
| Mycobactericide | |
| Odontolytic | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Refrigerant | Martindale's 28th |

| | | | | |
|-------------|----------------|----|----|----------------------------|
| CITRIC-ACID | Fruit Juice | -- | -- | Jim Duke's personal files. |
|-------------|----------------|----|----|----------------------------|

Activities (23)

| | |
|-------------------------|---|
| Allergenic | |
| Alpha-Amylase-Inhibitor | |
| Antiaphthic 20,000 ppm | Martindale's 28th |
| Antiatherosclerotic | |
| Antibacterial | |
| Anticalculic | |
| Anticoagulant | Merck 11th Edition |
| Antileishmanic | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antioxidant Synergist | Merck 11th Edition |
| Antiseborrheic | |
| Antiseptic | Martindale's 29th |
| Antitubercular | |
| Antitumor | Economic & Medicinal Plant Research, 6: 235. |
| Disinfectant | Martindale's 29th |
| FLavor FEMA 370-4,400 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | |
|-----------------|---|
| Irritant | Zbovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative? | Lawrence Review of Natural Products, Sep-91. |
| Litholytic | Martindale's 29th |
| Mycobactericide | |
| Odontolytic | Zbovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Refrigerant | Martindale's 28th |

| | | | | | |
|-------------|------------------------|---------|---------|------|----------------------------|
| CITRONELLAL | Leaf Essent. Oil | 25000.0 | 89000.0 | -1.0 | Jim Duke's personal files. |
|-------------|------------------------|---------|---------|------|----------------------------|

Activities (20)

| | |
|---------------------------------|--|
| Acaricide | |
| Allergenic | |
| Antibacterial | |
| Antiseptic 3.8 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antistaphylococcic | |
| Antistreptococcic | |
| Candidicide | |
| Embryotoxic | |
| FLavor FEMA <1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Insectifuge | Merck 11th Edition |
| Irritant | Zbovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Mutagenic? | |
| Nematicide MIC 1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.56 uM | |
| Perfumery | |
| Pesticide | |
| Sedative ED=1 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Teratogenic | |

| | | | | |
|-------------|----------------------------|----|----|----------------------------|
| CITRONELLAL | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
|-------------|----------------------------|----|----|----------------------------|

Activities (20)

| | |
|---------------------------------|--|
| Acaricide | |
| Allergenic | |
| Antibacterial | |
| Antiseptic 3.8 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antistaphylococcic | |
| Antistreptococcic | |
| Candidicide | |
| Embryotoxic | |
| FLavor FEMA <1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Insectifuge | Merck 11th Edition |
| Irritant | Zbovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Mutagenic? | |
| Nematicide MIC 1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.56 uM | |
| Perfumery | |
| Pesticide | |
| Sedative ED=1 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Teratogenic | |

| | | | | |
|-------------|----------|----|----|----------------------------|
| CITRONELLAL | Pericarp | -- | -- | Jim Duke's personal files. |
|-------------|----------|----|----|----------------------------|

Activities (20)

| | |
|---------------------------------|--|
| Acaricide | |
| Allergenic | |
| Antibacterial | |
| Antiseptic 3.8 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antistaphylococccic | |
| Antistreptococccic | |
| Candidicide | |
| Embryotoxic | |
| FLavor FEMA <1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Insectifuge | Merck 11th Edition |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Mutagenic? | |
| Nematicide MIC 1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.56 uM | |
| Perfumery | |
| Pesticide | |
| Sedative ED=1 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Teratogenic | |

CITRONELLAL

Essential Oil -- -- Jim Duke's personal files.

Activities (20)

| | |
|---------------------------------|--|
| Acaricide | |
| Allergenic | |
| Antibacterial | |
| Antiseptic 3.8 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antistaphylococccic | |
| Antistreptococccic | |
| Candidicide | |
| Embryotoxic | |
| FLavor FEMA <1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |
| Insectifuge | Merck 11th Edition |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Mutagenic? | |
| Nematicide MIC 1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.56 uM | |
| Perfumery | |
| Pesticide | |
| Sedative ED=1 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Teratogenic | |

CITRONELLAL

Petiole -- 3.0 *

Activities (20)

| | |
|-------------------------|---|
| Acaricide | |
| Allergenic | |
| Antibacterial | |
| Antiseptic 3.8 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antistaphylococccic | |
| Antistreptococccic | |
| Candidicide | |
| Embryotoxic | |
| FLavor FEMA <1 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | |

| | |
|---------------------------------|--|
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Motor-Depressant | Buchbauer et al, e.g. Buchbauer et al, 1993. Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Mutagenic? | |
| Nematicide MIC 1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| P450-2B1-Inhibitor IC50=1.56 uM | |
| Perfumery | |
| Pesticide | |
| Sedative ED=1 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Teratogenic | |

| | | | | | |
|-------------|------------------------|--------|---------|-------|----------------------------|
| CITRONELLOL | Leaf Essent. Oil | 3700.0 | 14000.0 | -0.97 | Jim Duke's personal files. |
|-------------|------------------------|--------|---------|-------|----------------------------|

Activities (15)

| | |
|--------------------------------|--|
| Allergenic | |
| Antibacterial | |
| Antiseptic | |
| Antistaphylococcic | |
| Antistreptococcic | |
| Candidicide | |
| FLavor FEMA 1-50 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | HerbalGram No. 17. |
| Herbicide IC50=160 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Nematicide MLC=100 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Trichomonicide LD100=300 ug/ml | |

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|-------------|----------------------------|----|----|----------------------------|
| CITRONELLOL | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
|-------------|----------------------------|----|----|----------------------------|

Activities (15)

| | |
|--------------------------------|--|
| Allergenic | |
| Antibacterial | |
| Antiseptic | |
| Antistaphylococcic | |
| Antistreptococcic | |
| Candidicide | |
| FLavor FEMA 1-50 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | HerbalGram No. 17. |
| Herbicide IC50=160 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Nematicide MLC=100 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Trichomonicide LD100=300 ug/ml | |

| | | | | |
|-------------|----------|----|----|----------------------------|
| CITRONELLOL | Pericarp | -- | -- | Jim Duke's personal files. |
|-------------|----------|----|----|----------------------------|

Activities (15)

| | |
|--------------------|--|
| Allergenic | |
| Antibacterial | |
| Antiseptic | |
| Antistaphylococcic | |
| Antistreptococcic | |
| Candidicide | |

| | |
|--------------------------------|--|
| Fungicide | HerbalGram No. 17. |
| Herbicide IC50=160 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Nematicide MLC=100 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Trichomonicide LD100=300 ug/ml | |

| | | | | | |
|---------------------|-------|-----|------|-------|--|
| CITRONELLYL-ACETATE | Plant | 4.0 | 20.0 | -0.68 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------------------|-------|-----|------|-------|--|

Activities (2)

| | |
|--------------------|--|
| Flavor FEMA <1-700 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |

| | | | | | |
|---------------------|---------|----|-----|---|--|
| CITRONELLYL-ACETATE | Petiole | -- | 1.0 | * | |
|---------------------|---------|----|-----|---|--|

Activities (2)

| | |
|--------------------|--|
| Flavor FEMA <1-700 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |

| | | | | |
|------------|-------------------------|----|----|--|
| CITRONETIN | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
| CITRONIN | Plant | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| CITROPTEN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| CITROPTEN | Fruit | -- | -- | * |
| CITRUSIN-A | Pericarp | -- | -- | Jim Duke's personal files. |
| CITRUSIN-B | Pericarp | -- | -- | Jim Duke's personal files. |
| CITRUSIN-C | Pericarp | -- | -- | Jim Duke's personal files. |
| CITRUSIN-F | Pericarp | -- | -- | Jim Duke's personal files. |
| CNIDICIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
| CONIFERIN | Pericarp | -- | -- | Jim Duke's personal files. |

Activities (2)

| | |
|----------------------------|--|
| Herbicide IC90-95=1,000 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Pesticide | |

| | | | | |
|---------------------|---------------|----|----|---|
| COUMARINS | Pt | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| D-GALACTURONIC-ACID | Fruit | -- | -- | * |
| D-LIMONENE | Essential Oil | -- | -- | Jim Duke's personal files. |

Activities (19)

| |
|--------------------------------------|
| Antiacetylcholinesterase IC22=1.2 mM |
| Anticancer (Breast) 8,000 mg/kg |
| Anticancer (Gastric) |
| Antimelanomic IC50=450 uM/l |
| Antitumor (Breast) 8,000 mg/kg |
| Antitumor (Gastric) |
| Antitumor-Promoter |
| Apoptotic 8,000 mg/kg |
| Cancer-Preventive |

| | | | |
|---------------------------------|--|--|--|
| Differentiator 8,000 mg/kg | | | |
| FLavor FEMA 30-2,300 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | |
| Hypocholesterolemic | | | |
| Insecticide | | | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | |
| Litholytic | Martindale's 28th | | |
| Nephrotoxic | | | |
| P450-2B1-Inhibitor IC50=0.19 uM | | | |
| Pesticide | | | |

| | | | |
|------------|-------------------------------|----------|----------------------------|
| D-LIMONENE | Pericarp -- Essent. Oil | 694400.0 | Jim Duke's personal files. |
|------------|-------------------------------|----------|----------------------------|

Activities (19)

| | | | |
|------------------------------------|--|--|--|
| Antiacylcholinesterase IC22=1.2 mM | | | |
| Anticancer (Breast) 8,000 mg/kg | | | |
| Anticancer (Gastric) | | | |
| Antimelanomic IC50=450 uM/l | | | |
| Antitumor (Breast) 8,000 mg/kg | | | |
| Antitumor (Gastric) | | | |
| Antitumor-Promoter | | | |
| Apoptotic 8,000 mg/kg | | | |
| Cancer-Preventive | | | |
| Chemopreventive | | | |
| Differentiator 8,000 mg/kg | | | |
| FLavor FEMA 30-2,300 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | |
| Hypocholesterolemic | | | |
| Insecticide | | | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | |
| Litholytic | Martindale's 28th | | |
| Nephrotoxic | | | |
| P450-2B1-Inhibitor IC50=0.19 uM | | | |
| Pesticide | | | |

| | | | | | |
|------------|------------------------|---------|----------|-----|----------------------------|
| D-LIMONENE | Leaf Essent. Oil | 99000.0 | 667000.0 | 1.0 | Jim Duke's personal files. |
|------------|------------------------|---------|----------|-----|----------------------------|

Activities (19)

| | | | |
|------------------------------------|--|--|--|
| Antiacylcholinesterase IC22=1.2 mM | | | |
| Anticancer (Breast) 8,000 mg/kg | | | |
| Anticancer (Gastric) | | | |
| Antimelanomic IC50=450 uM/l | | | |
| Antitumor (Breast) 8,000 mg/kg | | | |
| Antitumor (Gastric) | | | |
| Antitumor-Promoter | | | |
| Apoptotic 8,000 mg/kg | | | |
| Cancer-Preventive | | | |
| Chemopreventive | | | |
| Differentiator 8,000 mg/kg | | | |
| FLavor FEMA 30-2,300 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | |
| Hypocholesterolemic | | | |
| Insecticide | | | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | |
| Litholytic | Martindale's 28th | | |
| Nephrotoxic | | | |
| P450-2B1-Inhibitor IC50=0.19 uM | | | |
| Pesticide | | | |

| | | | |
|------------|-------------|----|----------------------------|
| D-LIMONENE | Pericarp -- | -- | Jim Duke's personal files. |
|------------|-------------|----|----------------------------|

Activities (19)

| | | | |
|------------------------------------|--|--|--|
| Antiacylcholinesterase IC22=1.2 mM | | | |
| Anticancer (Breast) 8,000 mg/kg | | | |
| Anticancer (Gastric) | | | |
| Antimelanomic IC50=450 uM/l | | | |

| | | | | |
|---------------------------------|--|--|--|--|
| Antitumor (Gastric) | | | | |
| Antitumor-Promoter | | | | |
| Apoptotic 8,000 mg/kg | | | | |
| Cancer-Preventive | | | | |
| Chemopreventive | | | | |
| Differentiator 8,000 mg/kg | | | | |
| FLavor FEMA 30-2,300 | | | | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Hypocholesterolemic | | | | |
| Insecticide | | | | |
| Insectifuge | | | | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Litholytic | | | | Martindale's 28th |
| Nephrotoxic | | | | |
| P450-2B1-Inhibitor IC50=0.19 uM | | | | |
| Pesticide | | | | |

DEACETYL-NOMILIN Seed -- -- Jim Duke's personal files.

DEACETYL-NOMILIN-17-O-BETA-D-GLUCOPYRANOSIDE Seed -- -- *

DECAN-1-AL Pericarp -- -- Jim Duke's personal files.

Activities (1)

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

DECANAL Petiole -- 1.5 *

DECANAL Essential Oil 6.0 20.0 Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980*.

DECANOIC-ACID Essential Oil -- -- Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980*.

Activities (3)

FLavor FEMA <1-1 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Nematicide Shoyakugaku Zasshi, 45: 270.

Pesticide

DECANOL Essential Oil -- -- Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980*.

Activities (2)

Nematicide MLC 100-700 ug/ml Shoyakugaku Zasshi, 44: 183.

Pesticide

DECYL-ACETATE Plant -- 5.0 Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980*.

Activities (1)

FLavor FEMA <1-1 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

DECYL-ALDEHYDE Leaf -- -- *

DELTA-3-CARENE Petiole -- 1.0 *

Activities (8)

Allergenic?

Antibacterial Revista Itiliana Eppos, 12: 5, 1994.

Antiinflammatory ipr Internat. J. Oriental Med. 15(4): 194, 1990+

Dermatitogenic

FLavor FEMA Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insectifuge Jacobson, M., *Glossary of Plant-Derived Insect Deterrents*, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Irritant

Pesticide

DELTA-CARENE Essential Oil -- -- Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980*.

DICONIFERYL-ALCOHOL-4-BETA-D-GLUCOSIDE Pericarp -- -- Jim Duke's personal files.

DIOSMETIN Plant -- -- *

ACTIVITIES (13)

| | |
|--|---|
| Aldose-Reductase-Inhibitor IC ₅₀ =10 uM | Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888. |
| Antialzheimeran | |
| Antidementia | |
| Antimutagenic ID ₅₀ =10-40 nM | Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Antirhinoviral | Economic & Medicinal Plant Research, 5: 197. |
| Antiviral | Economic & Medicinal Plant Research, 5: 197. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Estrogenic EC ₅₀ =2.9 uM | |
| NO-Inhibitor EC ₅₀ =19 uM | |
| Osteoblastogenic | |
| PPAR-Gamma-Antagonist | |
| TNF-alpha-Inhibitor IC ₅₀ =3.27 uM | |
| TNF-alpha-Inhibitor EC ₅₀ =39 uM | |

DIOSMIN

Fruit -- 5.0 *

Activities (34)

| | |
|--|---|
| AntiCVI | |
| Anticancer | |
| Anticapillary-Fragility 300 mg/2x/day/woman | Martindale's 28th |
| Anticarcinogenic | |
| Anticlastogen | |
| Anticytotoxic | |
| Antiedemic 600 mg/kg rat | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Antiedemic 50-200 mg/kg/day | |
| Antihemorrhoidal 450 mg 2x/day x7days then 1x/day x2months | |
| Antihistaminic | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antiinflammatory 600 mg/kg rat | |
| Antileukotriene | |
| Antimelanomic | |
| Antimetastatic | |
| Antimetrorrhagic | Fitoterapia No.55-1984. |
| Antioxidant | |
| Antiperioxidant | |
| Antiproliferant | |
| Antiprostaglandin | |
| Antiradicular | |
| Antithromboxane | |
| Antiulcer | |
| COMT-Inhibitor 200-400 mg/kg ip | |
| Chemopreventive | |
| Cyclooxygenase-Inhibitor | |
| Cytoprotective | |
| Diuretic | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Hypoglycemic | |
| Lipoxygenase-Inhibitor | |
| MDR-Inhibitor 100 uM | Critchfield, J. W., Welsh, C. J., Phang, J. M., Yeh, G. C. 1994. Modulation of Adriamycin Accumulation and Efflux by Flavonoids in HCT-15 Colon Cells: Activation of P-Glycoprotein as a Putative Mechanism. <i>Biochem Pharmacol</i> , 48(7): 1437-1445. |
| P450-Inhibitor | |
| Radioprotective | |
| Venoprotective | |
| Venotonics | |

DIOSMIN

Leaf -- -- Jim Duke's personal files.

Activities (34)

| | |
|---|-------------------|
| AntiCVI | |
| Anticancer | |
| Anticapillary-Fragility 300 mg/2x/day/woman | Martindale's 28th |
| Anticarcinogenic | |
| Anticlastogen | |
| Anticytotoxic | |

| | | | | |
|---|---|--|--|--|
| Antiedemic 50-200 mg/kg/day | | | | |
| Antihemorrhoidal 450 mg 2x/day x7days then 1x/day x2months | | | | |
| Antihistaminic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | |
| Antiinflammatory 600 mg/kg rat | | | | |
| Antileukotriene | | | | |
| Antimelanomic | | | | |
| Antimetastatic | | | | |
| Antimetrorrhagic | Fitoterapia No.55-1984. | | | |
| Antioxidant | | | | |
| Antiperoxidant | | | | |
| Antiproliferant | | | | |
| Antiprostaglandin | | | | |
| Antiradicular | | | | |
| Antithromboxane | | | | |
| Antiulcer | | | | |
| COMT-Inhibitor 200-400 mg/kg ip | | | | |
| Chemopreventive | | | | |
| Cyclooxygenase-Inhibitor | | | | |
| Cytoprotective | | | | |
| Diuretic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | |
| Hypoglycemic | | | | |
| Lipoxygenase-Inhibitor | | | | |
| MDR-Inhibitor 100 uM | Critchfield, J. W., Welsh, C. J., Phang, J. M., Yeh, G. C. 1994. Modulation of Adriamycin Accumulation and Efflux by Flavonoids in HCT-15 Colon Cells: Activation of P-Glycoprotein as a Putative Mechanism. <i>Biochem Pharmacol</i> , 48(7): 1437-1445. | | | |
| P450-Inhibitor | | | | |
| Radioprotective | | | | |
| Venoprotective | | | | |
| Venotonic | | | | |

| | | | | |
|--------------------------------------|---|--------|--------|--|
| DIPHENYLAMINE | Plant | -- | -- | Jim Duke's personal files. |
| Activities (3) | | | | |
| Antidiabetic 10 mg/kg orl rbt | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989. | | | |
| Hypoglycemic 10 mg/kg orl rbt | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989. | | | |
| Nephrotoxic 35 mg/day (=100 g onion) | | | | |
| DODECANAL | Essential Oil | -- | 10.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| Activities (2) | | | | |
| FLavor FEMA 1-100 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Irritant | Zbovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | |
| DODECANAL | Petiole | -- | -- | * |
| Activities (2) | | | | |
| FLavor FEMA 1-100 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Irritant | Zbovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | |
| DODECANOIC-ACID | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| Activities (1) | | | | |
| FLavor FEMA 2-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| EO | Pericarp | -- | 2600.0 | -1.16 |
| EO | Pt | 2000.0 | 6000.0 | 1.0 |
| EPIJASMONIC-ACID-METHYL-ESTER | Pericarp | -- | -- | Jim Duke's personal files. |
| ERIOCITRIN | Leaf | -- | -- | Jim Duke's personal files. |
| ERIOCITRIN | Fruit | -- | 1.0 | Jim Duke's personal files. |

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|-------------------------------|--|----------|----------|--|---|--|--|
| ERIODICTYOSIDE | Pericarp | -- | -- | Jim Duke's personal files. | | | |
| FARNESENE | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | | | |
| Activities (2) | | | | | | | |
| Pesticide | | | | | | | |
| Pheromone | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| FAT | Seed | 300000.0 | 400000.0 | 0.71 | * | | |
| FAT | Fruit | -- | 28000.0 | -0.43 | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. | | |
| FATTY-ACIDS(C12-C24) | Silk Stigma Style | -- | -- | Jim Duke's personal files. | | | |
| FERULIC-ACID | Fruit | 14.0 | 40.0 | -0.38 | * | | |
| Activities (61) | | | | | | | |
| Allelopathic | Holappa, L.D., and Blum*, U. 1991. Effects of Exogenously Applied Ferulic Acid, a Potential Allelopathic Compound, on Leaf Growth, Water Utilization, and Endogenous Abscisic Acid Levels of Tomato, Cucumber, and Bean. <i>J. of Chemical Ecology</i> , 17(5): 865. | | | | | | |
| Analgesic | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 69. | | | | | | |
| Antiaggregant | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990. | | | | | | |
| Antiallergic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | | | | |
| Antiarrhythmic | | | | | | | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| Anticancer (Colon) | | | | | | | |
| Anticancer (Fore stomach) | | | | | | | |
| Anticancer (Liver) | | | | | | | |
| Anticancer (Skin) | | | | | | | |
| Anticarcinogenic | | | | | | | |
| Antidysmenorrheic | | | | | | | |
| Antiestrogenic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| Antiherpetic | | | | | | | |
| Antiinflammatory | Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19. | | | | | | |
| Antileukemic IC50=25-56 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. | | | | | | |
| Antimitotic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| Antimutagenic | Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18. | | | | | | |
| Antineoplastic (Stomach) | | | | | | | |
| Antinitrosaminic | Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18. | | | | | | |
| Antioxidant 3,000 uM | | | | | | | |
| Antioxidant IC51=200 ppm | | | | | | | |
| Antioxidant 1/3 quercetin | | | | | | | |
| Antioxidant 1/2 BHA | | | | | | | |
| Antioxidant EC50=9-15 ug/ml | | | | | | | |
| Antiradicular EC50=9-15 ug/ml | | | | | | | |
| Antiradicular IC50=116-124 uM | | | | | | | |
| Antiserotonin | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| Antispasmodic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | | | | |
| Antithrombic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | | | | |
| Antitumor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | | | |
| Antitumor (Colon) | | | | | | | |
| Antitumor (Fore stomach) | | | | | | | |
| Antitumor (Liver) | | | | | | | |
| Antitumor (Skin) | | | | | | | |
| Antitumor-Promoter IC46=10 uM | Cancer Research, 48: 5941. | | | | | | |

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|---|--|
| Arteriodilator | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Cardiac | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990. |
| Cholagogue | Pharmazie, 46: 156, 1991. |
| Choleretic | Williamson, E. M. and Evans, F.J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd, Essex UK, 362 pp, 1988, reprint 1989. |
| Fungicide | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp. |
| Hepatoprotective | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy.</i> Churchill Livingston, Edinburgh. |
| Hepatotropic | |
| Herbicide | Angewandte Botanik 68(5/6)=1994. Page 195. |
| Hydrocholerectic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Hypolipidemic | |
| Immunostimulant | Economic & Medicinal Plant Research, 1: 124. |
| Insectifuge | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| Metal-Chelator | McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. <i>Phenolic Compounds in Food and Their Effects on Health,</i> Ch.25. |
| Ornithine-Decarboxylase-Inhibitor | Hagerman, A.E. <i>Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health,</i> Ch.19. |
| Pesticide | |
| Phagocytotic | |
| Preservative | Merck 11th Edition |
| Prostaglandigenic | |
| Prostaglandin-Synthesis-Inhibitor 0.58-3.2 mM | Xu, L. N., Yu, W. G., Tian, J. Y., Liu, Q. Y. 1990. Effect of Sodium Ferulate on Arachidonic Acid Metabolism. <i>Yao Hsueh Hsueh Pao</i> , 25(6): 412-416. |
| Sunscreen | Chemical Marketing Reporter; a weekly tabloid, 9/10/92. |
| Uterosedative 30-100 mg/kg ivn rat | Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990. |

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|-------|-------|---------|---------|-------|---|
| FIBER | Fruit | 17000.0 | 47000.0 | -0.89 | * |
|-------|-------|---------|---------|-------|---|

Activities (15)

| | |
|------------------------------|---|
| Angiotensin-Receptor-Blocker | |
| Antidiabetic | |
| Antihypertensive | |
| Antiobesity | |
| Antitumor | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiulcer | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Beta-Blocker | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardioprotective | |
| Diuretic | |
| Hypocholesterolemic | |
| Hypotensive 10 g/man/day/orl | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Hypouricemic | |
| Laxative | |
| Vasodilator | |

| | | | | |
|------------------|-------|----|----|---|
| GAMMA-SITOSTEROL | Plant | -- | -- | * |
|------------------|-------|----|----|---|

| | | | | |
|-----------------|----------------------------|---------|---------|----------------------------|
| GAMMA-TERPINENE | Pericarp Essent. Oil | 12000.0 | 83200.0 | Jim Duke's personal files. |
|-----------------|----------------------------|---------|---------|----------------------------|

Activities (11)

| | |
|---|---|
| ACE-Inhibitor 100 ug/ml (weak activity) | |
| Acaricide | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. <i>Toyama-Ken Yakuji Kenkyusho Nenpo</i> , (20): 95-101. |
| Antiacetylcholinesterase IC23=1.2 mM | |
| Antifeedant | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Antioxidant | Jim Duke's personal files. |
| FLavor FEMA 1-40 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253. |

Pesticide

| | | | | |
|--|--|--------|---------|--|
| GAMMA-TERPINENE | Pericarp | -- | -- | Jim Duke's personal files. |
| Activities (11) | | | | |
| ACE-Inhibitor 100 ug/ml (weak activity) | | | | |
| Acaricide | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. | | | |
| Antiacyetylcholinesterase IC23=1.2 mM | | | | |
| Antifeedant | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | |
| Antioxidant | Jim Duke's personal files. | | | |
| FLavor FEMA 1-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Pesticide | | | | |
| GAMMA-TERPINENE | Petiole | -- | 535.0 | * |
| Activities (11) | | | | |
| ACE-Inhibitor 100 ug/ml (weak activity) | | | | |
| Acaricide | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. | | | |
| Antiacyetylcholinesterase IC23=1.2 mM | | | | |
| Antifeedant | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | |
| Antioxidant | Jim Duke's personal files. | | | |
| FLavor FEMA 1-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Pesticide | | | | |
| GAMMA-TERPINENE | Essential Oil | 290.0 | 1400.0 | -0.8 |
| | | | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| Activities (11) | | | | |
| ACE-Inhibitor 100 ug/ml (weak activity) | | | | |
| Acaricide | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. | | | |
| Antiacyetylcholinesterase IC23=1.2 mM | | | | |
| Antifeedant | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | |
| Antioxidant | Jim Duke's personal files. | | | |
| FLavor FEMA 1-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Pesticide | | | | |
| GAMMA-TERPINENE | Leaf Essent. Oil | 3000.0 | 44000.0 | -0.15 |
| | | | | Jim Duke's personal files. |
| Activities (11) | | | | |
| ACE-Inhibitor 100 ug/ml (weak activity) | | | | |
| Acaricide | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpene from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. | | | |
| Antiacyetylcholinesterase IC23=1.2 mM | | | | |

| | |
|------------------|--|
| | Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Antioxidant | Jim Duke's personal files. |
| FLavor FEMA 1-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |

GERANIAL Petiole -- 60.0 *

Activities (13)

| | |
|----------------------|--|
| AntiEBV IC50=16 uM | |
| Antiaflatoxin | |
| Antibacterial | Onawunmi, G.O., Yisak, W-A., Ogunlana,* E.O. 1984. Antibacterial Constituents In The Essential Oil Of <i>Cymbopogon citratus</i> (DC.) Staph. Journal of Ethnopharmacology, 12: 279-286, 1984. |
| Antitumor (Colon) | |
| Antitumor (Skin) | |
| Antiviral IC50=16 uM | |
| Antiyeast | |
| Chemopreventive | |
| Estrogenic | |
| Fungicide | |
| Glutathionigenic | |
| Pesticide | |
| Spasmolytic | |

GERANIAL Essential 42.0 236.0 1.0 * Oil

Activities (13)

| | |
|----------------------|--|
| AntiEBV IC50=16 uM | |
| Antiaflatoxin | |
| Antibacterial | Onawunmi, G.O., Yisak, W-A., Ogunlana,* E.O. 1984. Antibacterial Constituents In The Essential Oil Of <i>Cymbopogon citratus</i> (DC.) Staph. Journal of Ethnopharmacology, 12: 279-286, 1984. |
| Antitumor (Colon) | |
| Antitumor (Skin) | |
| Antiviral IC50=16 uM | |
| Antiyeast | |
| Chemopreventive | |
| Estrogenic | |
| Fungicide | |
| Glutathionigenic | |
| Pesticide | |
| Spasmolytic | |

GERANIAL Pericarp -- 17600.0 Jim Duke's personal files. Essent. Oil

Activities (13)

| | |
|----------------------|--|
| AntiEBV IC50=16 uM | |
| Antiaflatoxin | |
| Antibacterial | Onawunmi, G.O., Yisak, W-A., Ogunlana,* E.O. 1984. Antibacterial Constituents In The Essential Oil Of <i>Cymbopogon citratus</i> (DC.) Staph. Journal of Ethnopharmacology, 12: 279-286, 1984. |
| Antitumor (Colon) | |
| Antitumor (Skin) | |
| Antiviral IC50=16 uM | |
| Antiyeast | |
| Chemopreventive | |
| Estrogenic | |
| Fungicide | |
| Glutathionigenic | |
| Pesticide | |
| Spasmolytic | |

Activities (13)

AntiEBV IC50=16 uM

Antiaflatoxin

Antibacterial Onawunmi, G.O., Yisak, W-A., Ogunlana,* E.O. 1984. Antibacterial Constituents In The Essential Oil Of Cymbopogon citratus (DC.) Stapf. *Journal of Ethnopharmacology*, 12: 279-286, 1984.

Antitumor (Colon)

Antitumor (Skin)

Antiviral IC50=16 uM

Antiyeast

Chemopreventive

Estrogenic

Fungicide

Glutathionigenic

Pesticide

Spasmolytic

GERANIOL

Pericarp -- --

Jim Duke's personal files.

Activities (35)

Allergenic

Anthelmintic Madaus, G. 1976. *Lehrbuch der Biologischen Hilfsmittel*. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.Antibacterial Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against *Streptococcus mutans*. *J. Agric. Food Chem.* 41: 1102-1105.

Antibacterial MIC=64 ug/ml

Antibacterial MBC=800 ug/ml

Anticancer (Pancreas) IC50=265 uM

Anticariogenic Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against *Streptococcus mutans*. *J. Agric. Food Chem.* 41: 1102-1105.

Antimelanomic IC50=150 uM/l

Antisalmonella MIC=400 ug/ml

Antiseptic 7 x phenol Wagner & Wolff, eds. 1977. *New Natural Products* (RS164. I56. 176)

Antiseptic MIC=64 ug/ml

Antiseptic 400-800 ug/ml

Antispasmodic Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (*Flores Graminis, Graminis Flos*) used in Aromatherapy. *J. Ess. Oil Res.*, 2: 185-191, 1990.

Antitubercular MIC=64 ug/ml

Antitumor Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. *J. Agric. Food Chem.* 43: 2144-2147.

Antitumor (Pancreas) IC50=265 uM

Ascaricide Madaus, G. 1976. *Lehrbuch der Biologischen Hilfsmittel*. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.CNS-Stimulant List, P.H. and Horhammer, L., *Hager's Handbuch der Pharmazeutischen Praxis*, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Candidicide

Embryotoxic

Emetic 3 x ipecac Lawrence Review of Natural Products, Sep-97.

Expectorant Madaus, G. 1976. *Lehrbuch der Biologischen Hilfsmittel*. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

FLavor FEMA 1-10 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

Fungicide IC93=2 mM Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, *Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology*, v. 4, Oryx Press, Phoenix, 1989, 267pp.Herbicide IC100-2,000 uM Keeler, R.F. and Tu, A.T. eds. 1991. *Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)* Marcel Dekker, Inc. NY. 665 pp.

Insectifuge 50 ppm

Insectiphile Merck 11th Edition

Mycobactericide MIC=64 ug/ml

Nematicide IC86=100 Nigg, H.N. and Seigler, D.S., eds. 1992. *Phytochemical Resources for Medicine and Agriculture*. Plenum Press, New York. 445 pp. ug/ml

Nematicide MLC=1,000 ug/ml Shoyakugaku Zasshi, 44: 183.

Perfumery Merck 11th Edition

Pesticide

Sedative

| | | | | |
|----------|---------------|----|----|--|
| GERANIOL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|----------|---------------|----|----|--|

Activities (35)

| | |
|-----------------------------------|---|
| Allergenic | |
| Anthelmintic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antibacterial MIC=400 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antibacterial MIC=64 ug/ml | |
| Antibacterial MBC=800 ug/ml | |
| Anticancer (Pancreas) IC50=265 uM | |
| Anticariogenic MIC=400 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antimelanomic IC50=150 uM/l | |
| Antisalmonella MIC=400 ug/ml | |
| Antiseptic 7 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antiseptic MIC=64 ug/ml | |
| Antiseptic 400-800 ug/ml | |
| Antispasmodic | Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdin, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990. |
| Antitubercular MIC=64 ug/ml | |
| Antitumor | Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. J. Agric. Food Chem. 43: 2144-2147. |
| Antitumor (Pancreas) IC50=265 uM | |
| Ascaricide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| CNS-Stimulant | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | |
| Embryotoxic | |
| Emetic 3 x ipecac | Lawrence Review of Natural Products, Sep-97. |
| Expectorant | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| FLavor FEMA 1-10 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide IC93=2 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx' Press, Phoenix, 1989, 267pp. |
| Herbicide IC100-2,000 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge 50 ppm | |
| Insectiphile | Merck 11th Edition |
| Mycobactericide MIC=64 ug/ml | |
| Nematicide IC86=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Nematicide MLC=1,000 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | |
| Trichomonicide LD100=300 ug/ml | |

| | | | | | |
|----------|------------------------|---------|---------|-------|----------------------------|
| GERANIOL | Leaf Essent. Oil | 13000.0 | 60200.0 | -0.63 | Jim Duke's personal files. |
|----------|------------------------|---------|---------|-------|----------------------------|

Activities (35)

| | |
|-----------------------------------|---|
| Allergenic | |
| Anthelmintic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antibacterial MIC=400 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Antibacterial MIC=64 ug/ml | |
| Antibacterial MBC=800 ug/ml | |
| Anticancer (Pancreas) IC50=265 uM | |
| Anticariogenic MIC=400 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |

IC₅₀=150 uM/lAntisalmonella
MIC=400 ug/ml

Antiseptic 7 x phenol Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

Antiseptic MIC=64
ug/mlAntiseptic 400-800
ug/mlAntispasmodic Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. *J. Ess. Oil Res.*, 2: 185-191, 1990.Antitubercular
MIC=64 ug/mlAntitumor Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. *J. Agric. Food Chem.* 43: 2144-2147.Antitumor (Pancreas)
IC₅₀=265 uM

Ascaricide Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

CNS-Stimulant List, P.H. and Horhammer, L. Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Candidicide

Embryotoxic

Emetic 3 x ipecac Lawrence Review of Natural Products, Sep-97.

Expectorant

Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

FLavor FEMA 1-10

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Fungicide IC₉₃=2 mM Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.Herbicide IC₁₀₀-2,000 uM Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Insectifuge 50 ppm

Insectiphile Merck 11th Edition

Mycobactericide

MIC=64 ug/ml

Nematicide IC₈₆=100 Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
ug/ml

Nematicide MLC=1,000 ug/ml Shoyakugaku Zasshi, 44: 183.

Perfumery Merck 11th Edition

Pesticide

Sedative

Trichomonicide LD₁₀₀=300 ug/ml**GERANIOL**

Petiole -- 80.0

*

Activities (35)

Allergenic

Anthelmintic Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

Antibacterial
MIC=400 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. *J. Agric. Food Chem.* 41: 1102-1105.Antibacterial MIC=64
ug/mlAntibacterial
MBC=800 ug/mlAnticancer
(Pancreas) IC₅₀=265
uMAnticariogenic Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. *J. Agric. Food Chem.* 41: 1102-1105.Antimelanomic
IC₅₀=150 uM/lAntisalmonella
MIC=400 ug/ml

Antiseptic 7 x phenol Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

Antiseptic MIC=64
ug/mlAntiseptic 400-800
ug/mlAntispasmodic Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. *J. Ess. Oil Res.*, 2: 185-191, 1990.Antitubercular
MIC=64 ug/mlAntitumor Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. *J. Agric. Food Chem.* 43: 2144-2147.Antitumor (Pancreas)
IC₅₀=265 uM

Ascaricide Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

CNS-Stimulant List, P.H. and Horhammer, L. Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Candidicide

Embryotoxic

| | |
|-----------------------------------|--|
| Expectorant | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| FLavor FEMA 1-10 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide IC93=2 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC100-2,000 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge 50 ppm | |
| Insectiphile | Merck 11th Edition |
| Mycobactericide MIC=64 ug/ml | |
| Nematicide IC86=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Nematicide MLC=1,000 ug/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | |
| Trichomonicide LD100=300 ug/ml | |

| | | | | |
|------------------|----------------------------|------|--------|---|
| GERANIOL-ACETATE | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
| GERANIOL-ACETATE | Leaf Essent. Oil | -- | 8100.0 | 1.0 |
| GERANYL-ACETATE | Essential Oil | 12.0 | 310.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

Activities (5)

| | |
|------------------|--|
| Allergenic | |
| FLavor FEMA 1-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insectiphile | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Sedative | Jim Duke's personal files. |

| | | | | |
|-----------------|---------|----|------|---|
| GERANYL-ACETATE | Petiole | -- | 12.0 | * |
|-----------------|---------|----|------|---|

Activities (5)

| | |
|------------------|--|
| Allergenic | |
| FLavor FEMA 1-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Insectiphile | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Sedative | Jim Duke's personal files. |

| | | | | |
|------------------|------------------|----|----|---|
| GERANYL-BUTYRATE | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|------------------|------------------|----|----|---|

Activities (3)

| | |
|------------------|--|
| FLavor FEMA 1-10 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |

| | | | | |
|-----------------|------------------|----|----|---|
| GERANYL-FORMATE | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|-----------------|------------------|----|----|---|

Activities (2)

| | |
|------------------|---|
| FLavor FEMA 1-10 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|----------------------------|------|----|----|----------------------------|
| GERANYL-OXY-PYRANOCOUMARIN | Root | -- | -- | Jim Duke's personal files. |
|----------------------------|------|----|----|----------------------------|

| | | | | |
|---------------|-------|----|----|---|
| GLUTAMIC-ACID | Plant | -- | -- | * |
|---------------|-------|----|----|---|

Activities (8)

| | |
|--------------------------------------|--|
| Antialkali? 500-1,000 mg/day/orl/man | Martindale's 29th |
| Antiepileptic | |
| Antihyperammonemic | Martindale's 29th |
| Antilithic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

Auday

| | |
|-----------------|---|
| Antiretardation | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Anxiolytic | Merck 11th Edition |
| Neurotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |

| | | | | |
|--------------|-------------------|----|-----|---|
| HEPTADECANAL | Essential Oil | -- | -- | Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i> |
| HEPTANAL | Essential Oil | -- | 4.0 | -1.0 |
| HERACLENIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |

Activities (2)

| |
|------------------|
| Anticoagulant |
| Antiinflammatory |

| | | | | |
|------------|-------------------|----|----|----------------------------|
| HERACLENOL | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
|------------|-------------------|----|----|----------------------------|

| | | | | |
|------------|------|----|----|----------------------------|
| HESPERIDIN | Leaf | -- | -- | Jim Duke's personal files. |
|------------|------|----|----|----------------------------|

Activities (31)

| | |
|-------------------------------------|--|
| Analgesic | |
| Anti-LDL | |
| AntiDNA | |
| AntiRNA | |
| Antiallergenic | Yakugaku Zasshi, 111: 193, 1991. |
| Antibradykinic | Economic & Medicinal Plant Research, 5: 366. |
| Anticapillary-Fragility | |
| Antiflu | Economic & Medicinal Plant Research, 5: 197. |
| Antihistaminic | |
| Antiinflammatory IC47=50 mg/kg scu | Da Silva Emim, J.A., Oliveira, A.B. and Lapa, A.J. Pharmacological Evaluation of the Anti-inflammatory Activity of a Citrus Bioflavonoid, Hesperidin, and the Isoflavonoids, Duartin and Claussequinone, in Rats and Mice. <i>J. Pharm. Pharmacol.</i> 46:118-122,1994 |
| Antiinflammatory IC63=100 mg/kg scu | Da Silva Emim, J.A., Oliveira, A.B. and Lapa, A.J. Pharmacological Evaluation of the Anti-inflammatory Activity of a Citrus Bioflavonoid, Hesperidin, and the Isoflavonoids, Duartin and Claussequinone, in Rats and Mice. <i>J. Pharm. Pharmacol.</i> 46:118-122,1994 |
| Antileukotriene | |
| Antioxidant IC50=8 ppm | Phytochemistry, 37: 1463. |
| Antiprostaglandin | |
| Antistomatitis | |
| Antitriglyceride | |
| Antiulcer 100-150 mg/kg ipr | |
| Antivaccinia | Economic & Medicinal Plant Research, 5: 197. |
| Antiviral | Vlietinck, A.J. and Dommisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research.</i> Wiss. Verlag. Stuttgart. |
| Anxiolytic | |
| CNS-Depressant 100-150 mg/kg ipr | |
| Calcium-Antagonist IC50=1.2 uM rbt | |
| Capillariprotective | Martindale's 29th |
| Catabolic | |
| Choleretic | |
| Cyclooxygenase-Inhibitor | |
| Hypolipidemic | |
| Lipoxygenase-Inhibitor | |
| Pesticide | |
| ProHDL | |
| Vasopressor | |

| | | | | | |
|------------|----------|---------|---------|------|----------------------------|
| HESPERIDIN | Pericarp | 20500.0 | 68800.0 | 0.98 | Jim Duke's personal files. |
|------------|----------|---------|---------|------|----------------------------|

Activities (31)

| |
|-----------|
| Analgesic |
| Anti-LDL |
| AntiDNA |
| AntiRNA |

| | |
|--|--|
| Antibradykinic | Economic & Medicinal Plant Research, 5: 366. |
| Anticapillary-Fragility | Economic & Medicinal Plant Research, 5: 197. |
| Antiflu | |
| Antihistaminic | |
| Antiinflammatory IC47=50 mg/kg scu | Da Silva Emim, J.A., Oliveira, A.B. and Lapa, A.J. Pharmacological Evaluation of the Anti-inflammatory Activity of a Citrus Bioflavonoid, Hesperidin, and the Isoflavonoids, Duartin and Claussequinoné, in Rats and Mice. <i>J. Pharm. Pharmacol.</i> 46:118-122,1994 |
| Antiinflammatory IC63=100 mg/kg scu | Da Silva Emim, J.A., Oliveira, A.B. and Lapa, A.J. Pharmacological Evaluation of the Anti-inflammatory Activity of a Citrus Bioflavonoid, Hesperidin, and the Isoflavonoids, Duartin and Claussequinone, in Rats and Mice. <i>J. Pharm. Pharmacol.</i> 46:118-122,1994 |
| Antileukotriene | |
| Antioxidant IC50=8 ppm | Phytochemistry, 37: 1463. |
| Antiprostaglandin | |
| Antistomatitis | |
| Antitriglyceride | |
| Antiulcer 100-150 mg/kg ipr | |
| Antivaccinia | Economic & Medicinal Plant Research, 5: 197. |
| Antiviral | Vlietinck, A.J. and Dommissie, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart. |
| Anxiolytic | |
| CNS-Depressant 100-150 mg/kg ipr | |
| Calcium-Antagonist IC50=1.2 uM rbt | |
| Capillaroprotective | Martindale's 29th |
| Catabolic | |
| Choleretic | |
| Cyclooxygenase-Inhibitor | |
| Hypolipidemic | |
| Lipoxygenase-Inhibitor | |
| Pesticide | |
| ProHDL | |
| Vasopressor | |

| | | | | |
|------------|-------|----|----|----------------------------|
| HESPERIDIN | Fruit | -- | -- | Jim Duke's personal files. |
|------------|-------|----|----|----------------------------|

Activities (31)

| | |
|--|--|
| Analgesic | |
| Anti-LDL | |
| AntiDNA | |
| AntiRNA | |
| Antiallergenic | Yakugaku Zasshi, 111: 193, 1991. |
| Antibradykinic | Economic & Medicinal Plant Research, 5: 366. |
| Anticapillary-Fragility | |
| Antiflu | Economic & Medicinal Plant Research, 5: 197. |
| Antihistaminic | |
| Antiinflammatory IC47=50 mg/kg scu | Da Silva Emim, J.A., Oliveira, A.B. and Lapa, A.J. Pharmacological Evaluation of the Anti-inflammatory Activity of a Citrus Bioflavonoid, Hesperidin, and the Isoflavonoids, Duartin and Claussequinoné, in Rats and Mice. <i>J. Pharm. Pharmacol.</i> 46:118-122,1994 |
| Antiinflammatory IC63=100 mg/kg scu | Da Silva Emim, J.A., Oliveira, A.B. and Lapa, A.J. Pharmacological Evaluation of the Anti-inflammatory Activity of a Citrus Bioflavonoid, Hesperidin, and the Isoflavonoids, Duartin and Claussequinone, in Rats and Mice. <i>J. Pharm. Pharmacol.</i> 46:118-122,1994 |
| Antileukotriene | |
| Antioxidant IC50=8 ppm | Phytochemistry, 37: 1463. |
| Antiprostaglandin | |
| Antistomatitis | |
| Antitriglyceride | |
| Antiulcer 100-150 mg/kg ipr | |
| Antivaccinia | Economic & Medicinal Plant Research, 5: 197. |
| Antiviral | Vlietinck, A.J. and Dommissie, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart. |
| Anxiolytic | |
| CNS-Depressant 100-150 mg/kg ipr | |
| Calcium-Antagonist IC50=1.2 uM rbt | |
| Capillaroprotective | Martindale's 29th |
| Catabolic | |
| Choleretic | |
| Cyclooxygenase-Inhibitor | |
| Hypolipidemic | |
| Lipoxygenase-Inhibitor | |

ProHDL
Vasopressor

| | | | | |
|---------------|---------------|----|----|--|
| HESPERIDOSIDE | Fruit | -- | -- | * |
| HEXADECANAL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| HEXANAL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

Activities (5)

Antibacterial MBC=800 ug/ml
 Antisalmonella MIC=400 ug/ml
 Antiseptic 400-800 ug/ml
 FLavor FEMA <1-5
 Pesticide Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

| | | | | |
|---------|---------------|----|----|--|
| HEXANOL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------|---------------|----|----|--|

Activities (3)

Antiseptic
 FLavor FEMA 0.2-25 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
 Pesticide

| | | | | |
|--------------------------------|----------|----|------|----------------------------|
| ICHANGIN-17-O-BETA-D-GLUCOSIDE | Seed | -- | -- | Jim Duke's personal files. |
| ICHANGIN-4-BETA-D-GLUCOSIDE | Pericarp | -- | 19.6 | Jim Duke's personal files. |
| IMPERATORIN | Fruit | -- | -- | * |

Activities (25)

Antiaflatoxin IC50=2.66 uM
 Antiaflatoxin 0.7 ppm
 Antiaggregant
 Antialopanic Martindale's 28th
 Anticonvulsant
 Antiinflammatory
 Antileukodermic
 Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.
 Antimutagenic Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of *Zanthoxylum americanum*. *Phytotherapy Research* 4(6): 216-219.
 Antiplatelet
 Antitumor-Promoter IC86=50 ug/ml
 Antivitiligo
 Bufocidic Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.
 Calcium-Antagonist IC50=4 ug/ml
 Calcium-Antagonist 31.6 ug/ml gpg
 Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.
 Cytochrome-P450-Inhibitor 2 nM
 DME-Inhibitor IC50=116 uM Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.
 Hepatoprotective IC50=2.66 uM
 Hepatoprotective 0.7 ppm
 Hepatotoxic
 Lipolytic
 Molluscicide
 Piscicide Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.
 Sedative Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdin, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (*Flores Graminis*, *Graminis Flos*) used in Aromatherapy. *J. Ess. Oil Res.*, 2: 185-191, 1990.

| | | | | |
|-------------|-------------------------|----|----|----------------------------|
| IMPERATORIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
|-------------|-------------------------|----|----|----------------------------|

| | |
|--------------------------------------|--|
| Antiaflatoxin IC50=2.66 uM | |
| Antiaflatoxin 0.7 ppm | |
| Antiaggregant | |
| Antialope cic | Martindale's 28th |
| Anticonvulsant | |
| Antiinflammatory | |
| Antileukodermic | |
| Antimitotic 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Antimutagenic | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219. |
| Antiplatelet | |
| Antitumor-Promoter IC86=50 ug/ml | |
| Antivitilic | |
| Bufocide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Calcium-Antagonist IC50=4 ug/ml | |
| Calcium-Antagonist 31.6 ug/ml gpg | |
| Cancer-Preventive 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Cytochrome-P450-Inhibitor 2 nM | |
| DME-Inhibitor IC50=116 uM | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Hepatoprotective IC50=2.66 uM | |
| Hepatoprotective 0.7 ppm | |
| Hepatotoxic | |
| Lipolytic | |
| Molluscicide | |
| Piscicide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Sedative | Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdinio, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (<i>Flores Graminis</i> , <i>Graminis Flos</i>) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990. |

IRON Fruit 23.0 72.0 -0.24 *

Activities (6)

| | |
|------------------------------------|--|
| Antiakathisic | Martindale's 29th |
| Antianemic | Martindale's 29th |
| Anticanker | |
| Anticheilitic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp. |
| Antimenorrhagic 100 mg/day/wmn/orl | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Prooxidant | |

ISOERIOCITRIN Leaf -- -- Jim Duke's personal files.

ISOIMPERATORIN Essential Oil -- -- *

Activities (8)

| | |
|---------------------------------------|---|
| Antitumor-Promoter IC94=50 ug/ml | |
| Artemicide ED50=6->100 ug/ml | |
| Calcium-Antagonist | |
| Cytochrome-P450-Inhibitor 2 nM | |
| Cytotoxic (Breast) ED50=6.56 ug/ml | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219. |
| Cytotoxic (Colon) ED50=>10 ug/ml | Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219. |
| DME-Inhibitor IC50=46 uM | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Pesticide | |

ISOIMPERATORIN Fruit -- -- Jim Duke's personal files.
Essent. Oil

Activities (8)

IC₅₀=50 ug/mlArtemicide ED₅₀=6->100
ug/ml

Calcium-Antagonist

Cytochrome-P450-Inhibitor
2 nMCytotoxic (Breast)
ED₅₀=6.56 ug/ml
Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of *Zanthoxylum americanum*. *Phytotherapy Research* 4(6): 216-219.Cytotoxic (Colon)
ED₅₀=>10 ug/ml
Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of *Zanthoxylum americanum*. *Phytotherapy Research* 4(6): 216-219.DME-Inhibitor IC₅₀=46 uM
Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.

Pesticide

| | | | | |
|--------------------------------------|----------|----|----|--|
| ISOLIMOCITROL | Pericarp | -- | -- | Jim Duke's personal files. |
| ISOLIMOCITROL-3,7,4'-TRIMETHYL-ETHER | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
| ISOLIMOCITROL-3-BETA-D-GLUCOSIDE | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
| ISOPIMPINELLIN | Plant | -- | -- | * |

Activities (15)

Antiappetant

Antifeedant Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Antiinflammatory 100 ppm

Antilipogenic

Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.

Antitubercular

Calcium-Antagonist

Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.

Diuretic 125 mg/kg

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Insecticide

Molluscicide

Mutagenic

Pesticide

Piscicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

| | | | | | |
|------------|------------------------|----|---------|------|----------------------------|
| ISOPULEGOL | Leaf Essent. Oil | -- | 40000.0 | -1.0 | Jim Duke's personal files. |
|------------|------------------------|----|---------|------|----------------------------|

Activities (3)Antiacetylcholinesterase IC₅₀=2.0 mM

FLavor FEMA 5-30 Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry

Perfumery Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry

| | | | | | |
|-------------|------------------------|---------|----------|-----|----------------------------|
| ISOPULEGOLE | Leaf Essent. Oil | 18000.0 | 114000.0 | 1.0 | Jim Duke's personal files. |
|-------------|------------------------|---------|----------|-----|----------------------------|

ISORHAMNETIN

Flower -- -- *

Activities (11)

Antibacterial

Antihistaminic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Antiinflammatory Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Antioxidant Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Antispasmodic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Hepatoprotective Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.

MAO-Inhibitor

Pesticide

Quinone-Reductase-Inducer Yannai, S., Day, A. J., Williamson, G., Rhodes, M. J. C. 1998. Characterization of Flavonoids as Monofunctional or Bifunctional Inducers of Quinone Reductase in Murine Hepatoma Cell Lines. *Food Chem Toxicol*, 36(8): 623-630.

Vasodilator

| | | | | |
|--------------|----------|----|----|----------------------------|
| ISORHOIFOLIN | Leaf | -- | -- | Jim Duke's personal files. |
| ISOVITEXIN | Pericarp | -- | -- | Jim Duke's personal files. |

Activities (4)

ACE-Inhibitor IC50=0.28 mM/l

Antioxidant #NAME?

Antioxidant >BHA

Nigg, H.N. and Seigler, D.S., eds. 1992. *Phytochemical Resources for Medicine and Agriculture*. Plenum Press, New York. 445 pp.

Cancer-Preventive

Stitt, P. A. *Why George Should Eat Broccoli*. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

| | | | | |
|----------------------------|----------|----|----|----------------------------|
| JASMONIC-ACID-METHYL-ESTER | Pericarp | -- | -- | Jim Duke's personal files. |
|----------------------------|----------|----|----|----------------------------|

| | | | | | |
|--------------|-------|----|--------|-------|---|
| KILOCALORIES | Fruit | -- | 2640.0 | -1.55 | Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing, Bountiful, Utah. 377 pp. |
|--------------|-------|----|--------|-------|---|

| | | | | |
|--------------|-------|----|----|---|
| LAURALDEHYDE | Fruit | -- | -- | List, P.H. and Horhammer, L. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
|--------------|-------|----|----|---|

| | | | | |
|----------|-------|----|----|----------------------------|
| LIMETTIN | Shoot | -- | -- | Jim Duke's personal files. |
|----------|-------|----|----|----------------------------|

| | | | | |
|----------|---------------|----|-------|---|
| LIMETTIN | Essential Oil | -- | 295.0 | * |
|----------|---------------|----|-------|---|

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|------------|----------|----|----|----------------------------|
| LIMOCITRIN | Pericarp | -- | -- | Jim Duke's personal files. |
|------------|----------|----|----|----------------------------|

| | | | | |
|---|----------|----|----|----------------------------|
| LIMOCITRIN-3-(6-O-ALPHA-L-RHAMNOSYL-BETA-D-GLUCOSE) | Pericarp | -- | -- | Jim Duke's personal files. |
|---|----------|----|----|----------------------------|

| | | | | |
|---|----------|----|----|---|
| LIMOCITRIN-3-(6-O-ALPHA-L-RHAMNOSYL-BETA-D-GLUCOSIDE) | Pericarp | -- | -- | * |
|---|----------|----|----|---|

| | | | | |
|-------------------|-------|----|----|---|
| LIMOCITRIN-3-O-(3 | Plant | -- | -- | * |
|-------------------|-------|----|----|---|

| | | | | |
|--|----------|----|----|----------------------------|
| LIMOCITRIN-3-O-(3-HYDROXY-3-METHYL-GLUTARATE-(1,2)-BETA-GLUCOSIDE) | Pericarp | -- | -- | Jim Duke's personal files. |
|--|----------|----|----|----------------------------|

| | | | | |
|------------------------------------|-------|----|----|---|
| LIMOCITRIN-3-O-(5-ALPHA-GLUCOSYL-3 | Plant | -- | -- | * |
|------------------------------------|-------|----|----|---|

| | | | | |
|---|----------|----|----|----------------------------|
| LIMOCITRIN-3-O-(5-ALPHA-GLUCOSYL-3-HYDROXY-3-METHYL-GLUTARATE-(1,2)-BETA-GLUCOSIDE) | Pericarp | -- | -- | Jim Duke's personal files. |
|---|----------|----|----|----------------------------|

| | | | | |
|------------|----------|----|----|----------------------------|
| LIMOCITROL | Pericarp | -- | -- | Jim Duke's personal files. |
|------------|----------|----|----|----------------------------|

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|------------------------------------|-------|----|----|---|
| LIMOCITROL-3-O-(5-ALPHA-GLUCOSYL-3 | Plant | -- | -- | * |
|------------------------------------|-------|----|----|---|

| | | | | |
|---|----------|----|----|----------------------------|
| LIMOCITROL-3-O-(5-ALPHA-GLUCOSYL-3-HYDROXY-3-METHYL-GLUTARATE-(1,2)-BETA-GLUCOSIDE) | Pericarp | -- | -- | Jim Duke's personal files. |
|---|----------|----|----|----------------------------|

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|----------|---------------|--------|--------|-------|---|
| LIMONENE | Essential Oil | 2796.0 | 8000.0 | -0.69 | * |
|----------|---------------|--------|--------|-------|---|

Activities (60)

| | |
|---------------------------------------|--|
| AChE-Inhibitor | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Acaricide LC100=8 uM | |
| Allelochemical | |
| Allergenic 1/20th carene | |
| Antiacytcholinesterase IC22-26=1.2 mM | |
| Antidiademonic | |
| Antialzheimeran? | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Antiasthmatic | |
| Antibacterial | Revista Itiliana Eppos, 12: 5, 1994. |
| Anticancer | |
| Antiesophagitic | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | |
| Antilithic | |
| Antilymphomitic | |
| Antimetastatic (Stomach) | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antioesity | |
| Antiseptic | |

| | |
|---|--|
| Antitumor | |
| Antitumor (Breast) | |
| Antitumor (Colon) | |
| Antitumor (Pancreas) | |
| Antitumor (Prostate) | |
| Antitumor (Stomach) | |
| Antiviral | |
| Apoptotic | |
| Bronchoprotectant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidistat | |
| Chemopreventive | |
| Cholesterolytic | |
| Detoxicant | |
| Enterococontractant | J. Aromatherapy 4: 22. |
| Expectorant | |
| Flavor | |
| Fungiphilic | J. Agric. Food Chem. 43: 2283. |
| Fungistat | |
| GST-Inducer | |
| Herbicide IC50=45 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Histaminic | |
| Immunomodulator | |
| Insecticide 0.37 uM/fly | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Interleukin-6-Inhibitor | |
| Irritant | |
| Lipolytic | |
| Myorelaxant 50 mg/kg | |
| NO-Genic | |
| Nematicide IC=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) | |
| Ozone-Scavenger | |
| P450-Inducer | |
| Peristaltic | |
| Pesticide | |
| Photosensitizer | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Transdermal | |

| | | | | | |
|----------|----------------|----------|----------|------|---|
| LIMONENE | Leaf | 284000.0 | 754000.0 | 2.65 | * |
| | Essent. Oil | | | | |

Activities (60)

| | |
|---------------------------------------|--|
| AChE-Inhibitor | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Acaricide LC100=8 uM | |
| Allelochemic | |
| Allergenic 1/20th carene | |
| Antiacylcholinesterase IC22-26=1.2 mM | |
| Antiadenomic | |
| Antialzheimeran? | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Antiasthmatic | |
| Antibacterial | Revista Itiliana Eppos, 12: 5, 1994. |
| Anticancer | |
| Antiesophagitic | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | |
| Antilithic | |
| Antilymphomitic | |
| Antimetastatic (Stomach) | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antiobesity | |

| | |
|---|--|
| Antispasmodic ED50=0.197 mg/ml | Fitoterapia No.59-1984. |
| Antitumor | |
| Antitumor (Breast) | |
| Antitumor (Colon) | |
| Antitumor (Pancreas) | |
| Antitumor (Prostate) | |
| Antitumor (Stomach) | |
| Antiviral | |
| Apoptotic | |
| Bronchoprotectant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidstat | |
| Chemopreventive | |
| Cholesterolytic | |
| Detoxicant | |
| Enterococontractant | J. Aromatherapy 4: 22. |
| Expectorant | |
| FLavor | |
| Fungiphilic | J. Agric. Food Chem. 43: 2283. |
| Fungistat | |
| GST-Inducer | |
| Herbicide IC50=45 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Histaminic | |
| Immunomodulator | |
| Insecticide 0.37 uM/fly | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Interleukin-6-Inhibitor | |
| Irritant | |
| Lipolytic | |
| Myorelaxant 50 mg/kg | |
| NO-Genic | |
| Nematicide IC=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) | |
| Ozone-Scavenger | |
| P450-Inducer | |
| Peristaltic | |
| Pesticide | |
| Photosensitizer | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Transdermal | |

LIMONENE

Petiole -- 3090.0 *

Activities (60)

| | |
|---------------------------------------|--|
| AChE-Inhibitor | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Acaricide LC100=8 uM | |
| Allelochemic | |
| Allergenic 1/20th carene | |
| Antiacylcholinesterase IC22-26=1.2 mM | |
| Antiademonic | |
| Antialzheimeran? | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Antiasthmatic | |
| Antibacterial | Revista Itiliana Eppos, 12: 5, 1994. |
| Anticancer | |
| Antiesophagitic | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | |
| Antilithic | |
| Antilymphomic | |
| Antimetastatic (Stomach) | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antiobesity | |
| Antiseptic | |

| | |
|---|--|
| Antitumor | |
| Antitumor (Breast) | |
| Antitumor (Colon) | |
| Antitumor (Pancreas) | |
| Antitumor (Prostate) | |
| Antitumor (Stomach) | |
| Antiviral | |
| Apoptotic | |
| Bronchoprotectant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidstat | |
| Chemopreventive | |
| Cholesterolytic | |
| Detoxicant | |
| Enterocontractant | J. Aromatherapy 4: 22. |
| Expectorant | |
| FLavor | |
| Fungiphilic | J. Agric. Food Chem. 43: 2283. |
| Fungistat | |
| GST-Inducer | |
| Herbicide IC50=45 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Histaminic | |
| Immunomodulator | |
| Insecticide 0.37 uM/fly | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Interleukin-6-Inhibitor | |
| Irritant | |
| Lipolytic | |
| Myorelaxant 50 mg/kg | |
| NO-Genic | |
| Nematicide IC=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) | |
| Ozone-Scavenger | |
| P450-Inducer | |
| Peristaltic | |
| Pesticide | |
| Photosensitizer | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Transdermal | |

| | | | | |
|----------|----------------------------|----------|----------|---|
| LIMONENE | Pericarp Essent. Oil | 512000.0 | 774000.0 | * |
|----------|----------------------------|----------|----------|---|

Activities (60)

| | |
|---------------------------------------|--|
| AChE-Inhibitor | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Acaricide LC100=8 uM | |
| Allelochemic | |
| Allergenic 1/20th carene | |
| Antiacylcholinesterase IC22-26=1.2 mM | |
| Antiademonic | |
| Antialzheimeran? | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Antiasthmatic | |
| Antibacterial | Revista Italiana Eppos, 12: 5, 1994. |
| Anticancer | |
| Antiesophagitic | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | |
| Antilithic | |
| Antilymphomic | |
| Antimetastatic (Stomach) | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antioesity | |

| | |
|---|--|
| Antispasmodic ED50=0.197 mg/ml | Fitoterapia No.59-1984. |
| Antitumor | |
| Antitumor (Breast) | |
| Antitumor (Colon) | |
| Antitumor (Pancreas) | |
| Antitumor (Prostate) | |
| Antitumor (Stomach) | |
| Antiviral | |
| Apoptotic | |
| Bronchoprotectant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidstat | |
| Chemopreventive | |
| Cholesterolytic | |
| Detoxicant | |
| Enterococontractant | J. Aromatherapy 4: 22. |
| Expectorant | |
| FLavor | |
| Fungiphilic | J. Agric. Food Chem. 43: 2283. |
| Fungistat | |
| GST-Inducer | |
| Herbicide IC50=45 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Histaminic | |
| Immunomodulator | |
| Insecticide 0.37 uM/fly | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Interleukin-6-Inhibitor | |
| Irritant | |
| Lipolytic | |
| Myorelaxant 50 mg/kg | |
| NO-Genic | |
| Nematicide IC=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) | |
| Ozone-Scavenger | |
| P450-Inducer | |
| Peristaltic | |
| Pesticide | |
| Photosensitizer | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Transdermal | |

| | | | | | |
|----------|-------------------------|----------|----------|------|----------------------------|
| LIMONENE | Fruit Essent. Oil | 512000.0 | 980000.0 | 1.27 | Jim Duke's personal files. |
|----------|-------------------------|----------|----------|------|----------------------------|

Activities (60)

| | |
|--|--|
| AChE-Inhibitor | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Acaricide LC100=8 uM | |
| Allelochemic | |
| Allergenic 1/20th carene | |
| Antiacyetylcholinesterase IC22-26=1.2 mM | |
| Antiadenomic | |
| Antialzheimeran? | Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8. |
| Antiasthmatic | |
| Antibacterial | Revista Italiana Eppos, 12: 5, 1994. |
| Anticancer | |
| Antiesophagitic | |
| Antifeedant | |
| Antiflu | Economic & Medicinal Plant Research, 5: 195. |
| Antiinflammatory | |
| Antilithic | |
| Antilymphomic | |
| Antimetastatic (Stomach) | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |

| | | | |
|---|--|--|--|
| Antiseptic | | | |
| Antispasmodic ED50=0.197 mg/ml | Fitoterapia No.59-1984. | | |
| Antitumor | | | |
| Antitumor (Breast) | | | |
| Antitumor (Colon) | | | |
| Antitumor (Pancreas) | | | |
| Antitumor (Prostate) | | | |
| Antitumor (Stomach) | | | |
| Antiviral | | | |
| Apoptotic | | | |
| Bronchoprotectant | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | |
| Candidstat | | | |
| Chemopreventive | | | |
| Cholesterolytic | | | |
| Detoxicant | | | |
| Enterocontractant | J. Aromatherapy 4: 22. | | |
| Expectorant | | | |
| FLavor | | | |
| Fungiphilic | J. Agric. Food Chem. 43: 2283. | | |
| Fungistat | | | |
| GST-Inducer | | | |
| Herbicide IC50=45 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. | | |
| Histaminic | | | |
| Immunomodulator | | | |
| Insecticide 0.37 uM/fly | | | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | |
| Interleukin-6-Inhibitor | | | |
| Irritant | | | |
| Lipolytic | | | |
| Myorelaxant 50 mg/kg | | | |
| NO-Genic | | | |
| Nematicide IC=100 ug/ml | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | |
| Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet) | | | |
| Ozone-Scavenger | | | |
| P450-Inducer | | | |
| Peristaltic | | | |
| Pesticide | | | |
| Photosensitizer | Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp. | | |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) | | |
| Transdermal | | | |

| | | | | |
|---------|-------|----|----|--|
| LIMONIN | Fruit | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
|---------|-------|----|----|--|

Activities (5)

| | | | |
|---------------------------------|--|--|--|
| Anticataleptic | | | |
| Antifeedant | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | |
| Antileukemic IC50=>10 ug/ml | Life Sciences 55: 1061. | | |
| Antimalarial IC50=>100 ug/ml | Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using Plasmodium falciparum*. Journal of Ethnopharmacology, 15: 201-209, 1986. | | |
| Pesticide | | | |

| | | | | |
|---------|------|----|----|----------------------------|
| LIMONIN | Seed | -- | -- | Jim Duke's personal files. |
|---------|------|----|----|----------------------------|

Activities (5)

| | | | |
|---------------------------------|--|--|--|
| Anticataleptic | | | |
| Antifeedant | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | |
| Antileukemic IC50=>10 ug/ml | Life Sciences 55: 1061. | | |
| Antimalarial IC50=>100 ug/ml | Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using Plasmodium falciparum*. Journal of Ethnopharmacology, 15: 201-209, 1986. | | |
| Pesticide | | | |

| | | | | |
|-------------------------------------|------|----|----|----------------------------|
| LIMONIN-17-O-BETA-D-GLUCOPYRANOSIDE | Seed | -- | -- | Jim Duke's personal files. |
|-------------------------------------|------|----|----|----------------------------|

| LIMONOATE-A-RING-LACTONE | | | | Jim Duke's personal files. | |
|--------------------------------------|--|---------|----------|----------------------------|---|
| LIMONOATE-A-RING-LACTONE | Leaf | -- | -- | Jim Duke's personal files. | |
| LIMONOATE-A-RING-LACTONE | Fruit | -- | -- | * | |
| LINALOL | Essential Oil | 8.0 | 30.0 | -1.0 | * |
| LINALOL | Leaf Essent. Oil | 17000.0 | 81000.0 | -1.0 | * |
| LINALOL | Pericarp Essent. Oil | 7000.0 | 110000.0 | | * |
| LINALOOL | Petiole | -- | 12.0 | | * |
| Activities (53) | | | | | |
| Acaricide C90=<15 ul/l (=<15 ppm) | | | | | |
| Allergenic | | | | | |
| Analgesic | | | | | |
| Anesthetic 0.01-1 ug/ml | | | | | |
| Antiacetylcholinesterase | | | | | |
| Antiallergic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. | | | | |
| Antianaphylactic | | | | | |
| Antibacterial MIC=1,600 ug/ml | | | | | |
| Anticariogenic MIC=1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. | | | | |
| Anticolic | | | | | |
| Anticonvulsant 200 mg/kg ipr mus | | | | | |
| Antiedemic | | | | | |
| Antiglutamaergic | | | | | |
| Antihistaminic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. | | | | |
| Antiinflammatory | | | | | |
| Antileukemic IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. | | | | |
| Antilymphomeric IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. | | | | |
| Antimange | | | | | |
| Antimite | | | | | |
| Antimutagenic | | | | | |
| Antiseptic 5 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) | | | | |
| Antishock | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. | | | | |
| Antispasmodic | Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (<i>Florēs Graminis</i> , <i>Graminis Flos</i>) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990. | | | | |
| Antiviral | | | | | |
| Barbituate-Synergist | | | | | |
| Bronchorelaxant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. | | | | |
| CNS-Depressant | | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Candidstat | | | | | |
| Carminative | | | | | |
| Culicide LC50=156-194 mg/l | | | | | |
| Cytotoxic | | | | | |
| Expectorant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. | | | | |
| FLavor FEMA 2-40 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry | | | | |
| Fungicide | Acta Botanica Sinica, 32: 49. | | | | |
| GABA-nergic | | | | | |
| Hypnotic | | | | | |
| Hypothermic | | | | | |
| Insecticide LC50=156-194 mg/l | | | | | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | | | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | | |
| Larvicide LC50=156-194 mg/l | | | | | |
| Mosquitofuge > Deet | | | | | |
| Motor-Depressant | Buchbauer et al, e.g. Buchbauer et al, 1993. Therapeutic properties of essential oils and fragrances, Chap.12 in Teranishi, R., Buttery, R.G and Sugisawa, H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC | | | | |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. | | | | |
| Perfumery | Merck 11th Edition | | | | |

| | |
|--|--|
| Prooxidant | Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Sedative 200 mg/kg ipr mus (1% as active as diazepam) | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Termitifuge | |
| Trichomonicide LD100=600 ug/ml | |
| Tumor-Promoter | |

| | | | | | |
|----------|---------------|-----|------|-------|--|
| LINALOOL | Essential Oil | 8.0 | 30.0 | -0.58 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|----------|---------------|-----|------|-------|--|

Activities (53)

| | |
|-------------------------------------|--|
| Acaricide C90=<15 ul/l (<15 ppm) | |
| Allergenic | |
| Analgesic | |
| Anesthetic 0.01-1 ug/ml | |
| Antiacytcholinesterase | |
| Antiallergic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antianaphylactic | |
| Antibacterial MIC=1,600 ug/ml | |
| Anticariogenic MIC=1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105. |
| Anticolic | |
| Anticonvulsant 200 mg/kg ipr mus | |
| Antiedemic | |
| Antiglutamaergic | |
| Antihistaminic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory | |
| Antileukemic IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. |
| Antilymphomeric IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. |
| Antimange | |
| Antimite | |
| Antimutagenic | |
| Antiseptic 5 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antishock | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antispasmodic | Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990. |
| Antiviral | |
| Barbituate-Synergist | |
| Bronchorelaxant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| CNS-Depressant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidstat | |
| Carminative | |
| Culicide LC50=156-194 mg/l | |
| Cytotoxic | |
| Expectorant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| FLavor FEMA 2-40 | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Acta Botanica Sinica, 32: 49. |
| GABA-nergic | |
| Hypnotic | |
| Hypothermic | |
| Insecticide LC50=156-194 mg/l | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Larvicide LC50=156-194 mg/l | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Prooxidant | Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |

Termitifuge Jacobson, M., *Glossary of Plant-Derived Insect Deterrents*, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
 Trichomonicide LD100=600 ug/ml
 Tumor-Promoter

| LINALOOL | Pericarp | -- | -- | Jim Duke's personal files. |
|---|--|----|----|----------------------------|
| Activities (53) | | | | |
| Acaricide C90=<15 ul/l (=<15 ppm) | | | | |
| Allergenic | | | | |
| Analgesic | | | | |
| Anesthetic 0.01-1 ug/ml | | | | |
| Antiacylcholinesterase | | | | |
| Antiallergic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | | |
| Antianaphylactic | | | | |
| Antibacterial MIC=1,600 ug/ml | | | | |
| Anticariogenic MIC=1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . <i>J. Agric. Food Chem.</i> 41: 1102-1105. | | | |
| Anticolic | | | | |
| Anticonvulsant 200 mg/kg ipr mus | | | | |
| Antidiabetic | | | | |
| Antiglutamaergic | | | | |
| Antihistaminic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | | |
| Antiinflammatory | | | | |
| Antileukemic IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. | | | |
| Antilymphomeric IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. | | | |
| Antimange | | | | |
| Antimite | | | | |
| Antimutagenic | | | | |
| Antiseptic 5 x phenol | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) | | | |
| Antishock | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | | |
| Antispasmodic | Buchbauer, G., Jirovecz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (<i>Flores Graminis</i> , <i>Graminis Flos</i>) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990. | | | |
| Antiviral | | | | |
| Barbituate-Synergist | | | | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | | |
| CNS-Depressant | | | | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | |
| Candidstat | | | | |
| Carminative | | | | |
| Culicide LC50=156-194 mg/l | | | | |
| Cytotoxic | | | | |
| Expectorant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. | | | |
| FLavor FEMA 2-40 | Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry | | | |
| Fungicide | Acta Botanica Sinica, 32: 49. | | | |
| GABA-nergic | | | | |
| Hypnotic | | | | |
| Hypothermic | | | | |
| Insecticide LC50=156-194 mg/l | | | | |
| Insectifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. | | | |
| Larvicide LC50=156-194 mg/l | | | | |
| Mosquitofuge > Deet | | | | |
| Motor-Depressant | Buchbauer et al, e.g. Buchbauer et al, 1993. Therapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC | | | |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. | | | |
| Perfumery | Merck 11th Edition | | | |
| Pesticide | | | | |
| Prooxidant | Charalambous, G. (Ed.). 1994. <i>Spices, Herbs and Edible Fungi</i> . Elsevier Science B. V. Amsterdam. 764 pp. | | | |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176) | | | |
| Sedative 200 mg/kg ipr mus (1% as active as diazepam) | | | | |
| Termitifuge | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. | | | |
| Trichomonicide LD100=600 ug/ml | | | | |

LINALOOL

Leaf
Essent.
Oil

18000.0 81000.0 -0.18

Jim Duke's personal files.

Activities (53)Acaricide C90=<15 ul/l
(=<15 ppm)

Allergenic

Analgesic

Anesthetic 0.01-1 ug/ml

Antiacyetylcholinesterase

Antiallergic

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Antianaphylactic

Antibacterial MIC=1,600
ug/mlAnticariogenic MIC=1,600
ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Anticolic

Anticonvulsant 200 mg/kg ipr
mus

Antiedemic

Antiglutamaergic

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Antihistaminic

Antiinflammatory

Antileukemic IC50=3.5-4.2
ug/ml

Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antilymphomeric IC50=3.5-4.2
ug/ml Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.

Antimange

Antimite

Antimutagenic

Antiseptic 5 x phenol

Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

Antishock

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Antispasmodic

Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (*Florēs Gramīnis, Gramīnis Flos*) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990.

Antiviral

Barbituate-Synergist

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Bronchorelaxant

CNS-Depressant

Cancer-Preventive

Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Candidstat

Carminative

Culicide LC50=156-194 mg/l

Cytotoxic

Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Expectorant

FLavor FEMA 2-40 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Fungicide

Acta Botanica Sinica, 32: 49.

GABA-nergic

Hypnotic

Hypothermic

Insecticide LC50=156-194
mg/l

Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Insectifuge

Irritant Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

Larvicide LC50=156-194 mg/l

Mosquitofuge > Deet

Motor-Depressant Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC

Nematicide MLC=1 mg/ml

Shoyakugaku Zasshi, 44: 183.

Perfumery

Merck 11th Edition

Pesticide

Prooxidant

Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.

Sedative ED=1-32 mg/kg

Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

Sedative 200 mg/kg ipr mus
(1% as active as diazepam)

Termitifuge Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

Trichomonicide LD100=600
ug/ml

Tumor-Promoter

Essent.
Oil

Activities (53)

| | |
|---|---|
| Acaricide C90=<15 ul/l (=<15 ppm) | |
| Allergenic | |
| Analgesic | |
| Anesthetic 0.01-1 ug/ml | |
| Antiacetylcholinesterase | |
| Antiallergic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antianaphylactic | |
| Antibacterial MIC=1,600 ug/ml | |
| Anticariogenic MIC=1,600 ug/ml | Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. <i>J. Agric. Food Chem.</i> 41: 1102-1105. |
| Anticolic | |
| Anticonvulsant 200 mg/kg ipr mus | |
| Antiedemic | |
| Antiglutamaergic | |
| Antihistaminic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory | |
| Antileukemic IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med.</i> 31(1):37-46. |
| Antilymphomeric IC50=3.5-4.2 ug/ml | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med.</i> 31(1):37-46. |
| Antimange | |
| Antimite | |
| Antimutagenic | |
| Antiseptic 5 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antishock | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antispasmodic | Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (<i>Flores Graminis</i> , <i>Graminis Flos</i>) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990. |
| Antiviral | |
| Barbituate-Synergist | |
| Bronchorelaxant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| CNS-Depressant | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidstat | |
| Carminative | |
| Culicide LC50=156-194 mg/l | |
| Cytotoxic | |
| Expectorant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| FLavor FEMA 2-40 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Acta Botanica Sinica, 32: 49. |
| GABA-nergic | |
| Hypnotic | |
| Hypothermic | |
| Insecticide LC50=156-194 mg/l | |
| Insectifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Irritant | Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Larvicide LC50=156-194 mg/l | |
| Mosquitofuge > Deet | |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Biöactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Prooxidant | Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp. |
| Sedative ED=1-32 mg/kg | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Sedative 200 mg/kg ipr mus (1% as active as diazepam) | |
| Termitifuge | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Trichomonicide LD100=600 ug/ml | |
| Tumor-Promoter | |

| | | | | | |
|------------------|------------------------|----|---------|------|----------------------------|
| LINALOOL-ACETATE | Leaf Essent. Oil | -- | 22000.0 | 0.41 | Jim Duke's personal files. |
|------------------|------------------------|----|---------|------|----------------------------|

Activities (7)

| | |
|-------------------------------|---|
| Anesthetic 0.01-1 ug/ml | |
| Antioxidant 400 ppm | |
| Antispasmodic ED50=0.21 mg/ml | Fitoterapia No.59-1984. |
| FLavor FEMA 2-15 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Motor-Depressant | Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances, Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC |
| Perfumery | Merck 11th Edition |
| Sedative | |

LINONIN Leaf -- -- Jim Duke's personal files.

LUTEIN Fruit 0.12 1.2 -0.73 *

Activities (15)

| | |
|----------------------------------|---|
| Antiatherosclerotic | |
| Anticancer (Breast) | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. |
| Antimaculitic | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Antinystalopic | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Antioxidant | |
| Antiproliferant | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. |
| Antiradicular | |
| Antiretinitic Optometry | |
| Antitumor (Breast) | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. |
| Antitumor (Colon) | |
| Colorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Prooxidant 5-40 ug/g | |
| Quinone-Reductase-Inducer 2.5 ug | Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103. |
| Retinoprotectant Optometry | |
| Ubiquot | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

LUTEOLIN Flower -- -- *

Activities (78)

| | |
|---|--|
| Aldose-Reductase-Inhibitor EC=3 ppm | Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993. |
| Aldose-Reductase-Inhibitor IC50=0.45 uM rat | |
| AntiHIV | |
| Antiallergic | |
| Antiangiogenic IC60-75=10 ⁶ uM | |
| Antiatherogenic | |
| Antibacterial MIC=500 ug/ml | Planta Medica, 57: A43, 1991. |
| Anticarcinogenic | |
| Anticarcinomic | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. |
| Anticataract EC=3 ppm | Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993. |
| Anticomplementary | |
| Antidermotic | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| Antiestrogenic | |
| Antifeedant IC52=<1,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Antiherpetic 11-23 ug/ml | |
| Antihistaminic <10-15 uM | |
| Antiinflammatory #NAME? | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Antileukemic 20-50 uM | |
| Antilymphomeric | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. |
| Antimelanomic | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46. |
| Antimutagenic ID50=2-5 nM | |
| Antimutagenic ID50=0.44 | |

| | |
|--|---|
| Antinociceptive | |
| Antioxidant IC50=10 uM | |
| Antipolio | Economic & Medicinal Plant Research, 5: 197. |
| Antiproliferant | |
| Antispasmodic | Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Antitumor 1-50 uM | |
| Antitumor (Colon) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitumor (Kidney) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitumor (Lung) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitumor (Ovary) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitumor (Pancreas) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitumor (Skin) 20 uM | |
| Antitumor (Stomach) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitumor (Thyroid) 12-50 uM | |
| Antitumor (brain) | Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antitussive | |
| Antiviral 11-23 ug/ml | |
| Aphidifuge | |
| Apoptotic 12-50 uM | |
| Aromatase-Inhibitor IC50=1 uM/l | Journal of Medicinal Food 2: 235.1999. |
| Beta-Glucuronidase-Inhibitor IC50=-40 uM | |
| Calcium-Antagonist IC50=1.2 uM rbt | |
| Cancer-Preventive | |
| Chemopreventive | |
| Choleretic | |
| Cytotoxic 1-50 uM | |
| Deiodinase-Inhibitor | Jim Duke's personal files. |
| Differentiator IC>40=40 uM | |
| Diuretic | Jim Duke's personal files. |
| Estrogenic 58% genistein | |
| Hepatoprotective | |
| Hyaluronidase-Inhibitor IC50+=100-250 uM | |
| Hypocholesterolemic | |
| ICAM-1-Inhibitor | |
| IKK-Inhibitor | |
| Iodothyronine-Deiodinase-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Lipoxygenase-Inhibitor | |
| MAPK-Inhibitor | |
| MMP-9-Inhibitor 20 uM | |
| Metalloproteinase-Inhibitor | |
| Myorelaxant | |
| NEP-Inhibitor IC50=>42 uM | |
| NF-kB-Inhibitor | |
| NO-Inhibitor | |
| PTK-Inhibitor 10-100 uM | |
| Pesticide | |
| Proliferant | |
| Prostaglandin-Synthetase-Inhibitor | |
| Protein-Kinase-C-Inhibitor IC70=50 uM | |
| Succinoidase-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| TNF-alpha-Inhibitor IC50=14.44 uM | |
| Topoisomerase-I-Inhibitor | Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. <i>Toxicol Ind Health</i> , 14: 223-237. |
| VEGF-Inhibitor IC50=2-7 uM | |
| Vasodilator | |
| Xanthine-Oxidase-Inhibitor IC50=0.11 ug/ml | Chem. & Pharm. Bull. 38: 1772. |

| | | | | |
|--------------------------------------|--|----|--------|--|
| LUTEOLIN-7-O-BETA-D-RUTINOSIDE | Leaf | -- | -- | Jim Duke's personal files. |
| LUTEOLIN-7-O-BETA-RUTINOSIDE | Leaf | -- | -- | * |
| MENTH-1-EN-9-OL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| METHYL-HEPTANONE | Leaf Essent. Oil | -- | -- | Jim Duke's personal files. |
| METHYL-HEPTANONE | Essential Oil | -- | -- | * |
| METHYL-HEPTENONE | Leaf Essent. Oil | -- | 6000.0 | * |
| MUCILAGE | Fruit | -- | -- | * |
| Activities (3) | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | |
| Demulcent | | | | |
| Hypocholesterolemic | | | | |
| MYRCENE | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
| Activities (22) | | | | |
| ACE-Inhibitor 100 ug/ml | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. | | | |
| Allergenic | | | | |
| Analgesic | Kauderer, B., Zamith, H., Paumgarten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. | | | |
| Antibacterial | | | | |
| Anticonvulsant | | | | |
| Antimutagenic | Kauderer, B., Zamith, H., Paumgarten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. | | | |
| Antinitrosaminic | | | | |
| Antinociceptive 10-20 mg/kg ipr mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990. | | | |
| Antinociceptive 20-40 mg/kg scu mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990. | | | |
| Antioxidant | Jim Duke's personal files. | | | |
| Antispasmodic | Jim Duke's personal files. | | | |
| Chemopreventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | |
| FLavor FEMA 0.5-9 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. | | | |
| Hypothermic | | | | |
| Insectifuge | | | | |
| Irritant | Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | |
| Myorelaxant 100-200 mg/kg | | | | |
| P450-2B1-Inhibitor IC50=0.14 uM | | | | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | |
| Pesticide | | | | |
| MYRCENE | Pericarp | -- | -- | Jim Duke's personal files. |
| Activities (22) | | | | |
| ACE-Inhibitor 100 ug/ml | | | | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. | | | |
| Allergenic | | | | |
| Analgesic | Kauderer, B., Zamith, H., Paumgarten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. | | | |
| Antibacterial | | | | |
| Anticonvulsant | | | | |
| Antimutagenic | Kauderer, B., Zamith, H., Paumgarten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. | | | |
| Antinitrosaminic | | | | |

| | |
|-------------------------------------|--|
| mg/kg ipr mus | |
| Antinociceptive 20-40 mg/kg scu mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. <i>J. Pharm. Pharmacol.</i> 42: 877-878, 1990. |
| Antioxidant | Jim Duke's personal files. |
| Antispasmodic | Jim Duke's personal files. |
| Chemopreventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| FLavor FEMA 0.5-9 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Hypothermic | |
| Insectifuge | |
| Irritant | Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Myorelaxant 100-200 mg/kg | |
| P450-2B1-Inhibitor IC50=0.14 uM | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |

| | | | | |
|---------|---------|----|------|---|
| MYRCENE | Petiole | -- | 75.0 | * |
|---------|---------|----|------|---|

Activities (22)

| | |
|--------------------------------------|--|
| ACE-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Aldose-Reductase-Inhibitor 100 ug/ml | |
| Allergenic | |
| Analgesic | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. |
| Antibacterial | |
| Anticonvulsant | |
| Antimutagenic | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. |
| Antinitrosaminic | |
| Antinociceptive 10-20 mg/kg ipr mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. <i>J. Pharm. Pharmacol.</i> 42: 877-878, 1990. |
| Antinociceptive 20-40 mg/kg scu mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. <i>J. Pharm. Pharmacol.</i> 42: 877-878, 1990. |
| Antioxidant | Jim Duke's personal files. |
| Antispasmodic | Jim Duke's personal files. |
| Chemopreventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| FLavor FEMA 0.5-9 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Hypothermic | |
| Insectifuge | |
| Irritant | Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Myorelaxant 100-200 mg/kg | |
| P450-2B1-Inhibitor IC50=0.14 uM | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |

| | | | | | |
|---------|---------------|------|--------|-------|--|
| MYRCENE | Essential Oil | 65.0 | 1270.0 | -0.43 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------|---------------|------|--------|-------|--|

Activities (22)

| | |
|--------------------------------------|--|
| ACE-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Aldose-Reductase-Inhibitor 100 ug/ml | |
| Allergenic | |
| Analgesic | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. |
| Antibacterial | |
| Anticonvulsant | |
| Antimutagenic | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. |
| Antinitrosaminic | |
| Antinociceptive 10-20 mg/kg ipr mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. <i>J. Pharm. Pharmacol.</i> 42: 877-878, 1990. |
| Antinociceptive 20-40 mg/kg scu mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. <i>J. Pharm. Pharmacol.</i> 42: 877-878, 1990. |
| Antioxidant | Jim Duke's personal files. |
| Antispasmodic | Jim Duke's personal files. |

| | | | | | |
|---------------------------------|--|--------|---------|-------|----------------------------|
| FLavor FEMA 0.5-9 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry | | | | |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. | | | | |
| Hypothermic | | | | | |
| Insectifuge | | | | | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | | |
| Myorelaxant 100-200 mg/kg | | | | | |
| P450-2B1-Inhibitor IC50=0.14 uM | | | | | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Pesticide | | | | | |
| MYRCENE | Leaf Essent. Oil | 5500.0 | 10000.0 | -0.33 | Jim Duke's personal files. |

Activities (22)

| | |
|--------------------------------------|--|
| ACE-Inhibitor 100 ug/ml | |
| Aldose-Reductase-Inhibitor 100 ug/ml | Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101. |
| Allergenic | |
| Analgesic | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. |
| Antibacterial | |
| Anticonvulsant | |
| Antimutagenic | Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991. |
| Antinitrosaminic | |
| Antinociceptive 10-20 mg/kg ipr mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990. |
| Antinociceptive 20-40 mg/kg scu mus | Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990. |
| Antioxidant | Jim Duke's personal files. |
| Antispasmodic | Jim Duke's personal files. |
| Chemopreventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| FLavor FEMA 0.5-9 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Hypothermic | |
| Insectifuge | |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Myorelaxant 100-200 mg/kg | |
| P450-2B1-Inhibitor IC50=0.14 uM | |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |

N-METHYL-TYRAMINE

| | | | |
|------|----|----|--|
| Leaf | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
|------|----|----|--|

Activities (1)

| | |
|-------------------|---|
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
|-------------------|---|

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|------------|----------|----|----|---|
| NARINGENIN | Pericarp | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
|------------|----------|----|----|---|

Activities (56)

| | |
|---------------------------------------|---|
| 11B-HSD-Inhibitor | |
| Aldose-Reductase-Inhibitor IC25=1 uM | Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888. |
| Aldose-Reductase-Inhibitor IC78=10 uM | Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888. |
| Aldose-Reductase-Inhibitor 100 uM | Oliveira, T. T., Nagem, T.J., Miranda, L. C. G., Paula, V. F., Teixeira, M. A. 1997. Inhibitory Action on Aldose Reductase by Soybean Flavonoids. J Braz Chem Soc, 8(3): 211-213. |
| Aldose-Reductase-Inhibitor 1 ug/mL | Aida, K., Tawata, M., Shindo, H., Onaya, T., Sasaki, H., Yamaguchi, T., Chin, M.(Chen, Z.), and Mitsuhashi, H. 1989. Isoliquiritigenin: A New Aldose Reductase Inhibitor from Glycyrrhizae Radix. Planta Medica 56(3): 254-258. |
| AntiHIV IC35=200 ug/ml | |
| Antiacetylcholinesterase | |
| Antiaflatoxin IC50=12 uM | |
| Antiaflatoxin IC50=3.37 ppm | |

| | |
|-----------------------------------|---|
| Antialzheimeran | |
| Antiamnesic | |
| Antiamyloid-Beta | |
| Antibacterial MIC=250-500 ug/ml | Planta Medica, 57: A43, 1991. |
| Anticancer | |
| Antiescherichic | |
| Antiestrogenic | |
| Antifibrotic | |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiherpetic | Economic & Medicinal Plant Research, 5: 197. |
| Antiinflammatory 20 ppm | |
| Antileukemic IC50=>10 ug/ml | Life Sciences 55: 1061. |
| Antimutagenic ID50=50-100 nM | Maga, J.A. Contribution of Phenolic Compounds to Smoke Flavor. Phenolic Compounds in Food and Their Effects on Health, Ch.13. |
| Antioxidant 7 x quercetin | |
| Antiperistaltic | |
| Antiperoxidative | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiradicular 7 x quercetin | |
| Antisindhis IC50=15 ug/ml | |
| Antispasmodic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antistaphylococcic | |
| Antitumor | |
| Antitumor-Promoter | |
| Antiulcer | Fitoterapia No.5-1990. |
| Antiviral IC50=15 ug/ml | |
| Aphidifuge | |
| Aromatase-Inhibitor IC45=1 uM/l | Journal of Medicinal Food 2: 235.1999. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | |
| Choleretic | |
| Cytochrome-P450-Inhibitor | Pizzorno, J. 1998. Total Wellness. Prima Health, a division of Prima. |
| Decarboxylase-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Embryotoxic | |
| Estrogenic EC50=0.1-25 uM/l | |
| Fungicide 2.5 mM | |
| Fungistat | Weidenborner, M., Hindorf, H., Jha, H.C., and Tsotsonos, P. 1989. Antifungal Activity of Flavonoids Against Storage Fungi of the Genus Aspergillus. Phytochemistry. 29(4): 1103-1105. |
| Hepatoprotective IC50=12 uM | |
| Hepatoprotective IC50=3.37 ppm | |
| Neuroprotective | |
| P450-Inhibitor | |
| Pesticide | |
| Serotonin-Inhibitor | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| TNF-alpha-Inhibitor IC50=14.41 uM | |
| Teratogenic | |
| Topoisomerase-I-Inhibitor | Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237. |
| Uterotrophic EC50=0.1-25 uM/l | Journal of Medicinal Food 2: 227.1999. |
| cAMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

NARINGIN Leaf -- -- Jim Duke's personal files.

Activities (12)

| | |
|----------------------------|--|
| Aldose-Reductase-Inhibitor | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidermatitic | |
| Antiinflammatory | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antineuropathic | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |

| | |
|-----------------------|--|
| Antiviral | Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| FLavor FEMA | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Myorelaxant | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |

| | | | | |
|----------|----------|----|----|----------------------------|
| NARINGIN | Pericarp | -- | -- | Jim Duke's personal files. |
|----------|----------|----|----|----------------------------|

Activities (12)

| | |
|----------------------------|--|
| Aldose-Reductase-Inhibitor | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antidermatitic | |
| Antiinflammatory | |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antineuropathic | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Antioxidant | |
| Antiviral | Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| FLavor FEMA | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Myorelaxant | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Pesticide | |

| | | | | |
|----------------------|------|----|----|----------------------------|
| NARINGIN-6"-MALONATE | Leaf | -- | -- | Jim Duke's personal files. |
|----------------------|------|----|----|----------------------------|

| | | | | |
|--------------------|------|----|----|----------------------------|
| NARINGIN-GLUCOSIDE | Leaf | -- | -- | Jim Duke's personal files. |
|--------------------|------|----|----|----------------------------|

| | | | | |
|-------------|-------|----|----|---|
| NARINGOSIDE | Fruit | -- | -- | * |
|-------------|-------|----|----|---|

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|-----------|----------|----|--------|-----|----------------------------|
| NARIRUTIN | Pericarp | -- | 3600.0 | 1.0 | Jim Duke's personal files. |
|-----------|----------|----|--------|-----|----------------------------|

Activities (1)

| | |
|-----------------------|--|
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
|-----------------------|--|

| | | | | |
|-----------|------|----|----|----------------------------|
| NARIRUTIN | Leaf | -- | -- | Jim Duke's personal files. |
|-----------|------|----|----|----------------------------|

Activities (1)

| | |
|-----------------------|--|
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
|-----------------------|--|

| | | | | |
|---------------------|------|----|----|----------------------------|
| NARIRUTIN-GLUCOSIDE | Leaf | -- | -- | Jim Duke's personal files. |
|---------------------|------|----|----|----------------------------|

| | | | | |
|------------------|-------------------------|----|----|----------------------------|
| NEOBYAKANGELICOL | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
|------------------|-------------------------|----|----|----------------------------|

| | | | | |
|---------------|----------|----|----|----------------------------|
| NEOHESPERIDIN | Pericarp | -- | -- | Jim Duke's personal files. |
|---------------|----------|----|----|----------------------------|

Activities (6)

| | |
|-----------------------------|--|
| Anticancer | |
| Antioxidant | |
| Antioxidant 7 x quercetin | |
| Antiradicular 7 x quercetin | |
| Antitumor-Promoter | |
| Cancer-Preventive | |

| | | | | |
|------------------|----------|----|----|---|
| NEOHESPERIDOSIDE | Pericarp | -- | -- | * |
|------------------|----------|----|----|---|

| | | | | |
|------------|------|----|----|---|
| NEOXANTHIN | Leaf | -- | -- | * |
|------------|------|----|----|---|

Activities (2)

| | |
|----------|--|
| Colorant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
|----------|--|

| | |
|----------|--|
| Ubiquiot | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
|----------|--|

| | | | | |
|-------|---------|----|------|---|
| NERAL | Petiole | -- | 60.0 | * |
|-------|---------|----|------|---|

Activities (4)

| | |
|---------------|---|
| Antibacterial | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp. |
|---------------|---|

Pesticide
Termiticide LD100=5 mg/g

| | | | | |
|-------|----------------------------|----|----|----------------------------|
| NERAL | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
|-------|----------------------------|----|----|----------------------------|

Activities (4)

| | |
|--------------------------|---|
| Antibacterial | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp. |
| Antispasmodic | |
| Pesticide | |
| Termiticide LD100=5 mg/g | |

| | | | | | |
|-------|------------------|------|-------|-----|---|
| NERAL | Essential Oil | 27.0 | 130.0 | 1.0 | * |
|-------|------------------|------|-------|-----|---|

Activities (4)

| | |
|--------------------------|---|
| Antibacterial | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp. |
| Antispasmodic | |
| Pesticide | |
| Termiticide LD100=5 mg/g | |

| | | | | | |
|-------|------------------------|--------|----------|-----|----------------------------|
| NERAL | Leaf Essent. Oil | 4000.0 | 172700.0 | 1.0 | Jim Duke's personal files. |
|-------|------------------------|--------|----------|-----|----------------------------|

Activities (4)

| | |
|--------------------------|---|
| Antibacterial | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp. |
| Antispasmodic | |
| Pesticide | |
| Termiticide LD100=5 mg/g | |

| | | | | |
|-------|---------|----|------|---|
| NEROL | Petiole | -- | 41.0 | * |
|-------|---------|----|------|---|

Activities (10)

| | |
|-----------------------------------|--|
| Antibacterial | HerbalGram No. 17. |
| Antihelicobacter | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antiulcer | |
| Estrogenic | |
| FLavor FEMA 1-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide ED100=300 ug/ml | |

| | | | | |
|-------|----------------------------|----|----|----------------------------|
| NEROL | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
|-------|----------------------------|----|----|----------------------------|

Activities (10)

| | |
|-----------------------------------|--|
| Antibacterial | HerbalGram No. 17. |
| Antihelicobacter | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antiulcer | |
| Estrogenic | |
| FLavor FEMA 1-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide ED100=300 ug/ml | |

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|-------|----------|----|----|----------------------------|
| NEROL | Pericarp | -- | -- | Jim Duke's personal files. |
|-------|----------|----|----|----------------------------|

Activities (10)

| | |
|---------------|--------------------|
| Antibacterial | HerbalGram No. 17. |
|---------------|--------------------|

| | |
|-----------------------------------|--|
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antulcer | |
| Estrogenic | |
| FLavor FEMA 1-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide ED100=300 ug/ml | |

| | | | | | |
|-------|------------------------|--------|---------|------|----------------------------|
| NEROL | Leaf Essent. Oil | 8000.0 | 76000.0 | -1.0 | Jim Duke's personal files. |
|-------|------------------------|--------|---------|------|----------------------------|

Activities (10)

| | |
|-----------------------------------|--|
| Antibacterial | HerbalGram No. 17. |
| Antihelicobacter | |
| Antiseptic | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Antiulcer | |
| Estrogenic | |
| FLavor FEMA 1-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Merck 11th Edition |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide ED100=300 ug/ml | |

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|---------------|----------------------------|----|----|--|----------------------------|
| NEROL-ACETATE | Pericarp Essent. Oil | -- | -- | | Jim Duke's personal files. |
|---------------|----------------------------|----|----|--|----------------------------|

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|---------------|------------------|------|-------|--|--|
| NEROL-ACETATE | Essential Oil | 16.0 | 310.0 | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------------|------------------|------|-------|--|--|

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|---------------|------------------------|----|--------|-----|----------------------------|
| NEROL-ACETATE | Leaf Essent. Oil | -- | 9000.0 | 1.0 | Jim Duke's personal files. |
|---------------|------------------------|----|--------|-----|----------------------------|

| | | | | | |
|---------------|---------|----|------|---|--|
| NERYL-ACETATE | Petiole | -- | 13.0 | * | |
|---------------|---------|----|------|---|--|

Activities (5)

| | |
|------------------|---|
| Antiflu | |
| Antiviral | |
| FLavor FEMA 1-15 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |

| | | | | | |
|---------------|------------------------|----|---------|--|----------------------------|
| NERYL-ACETONE | Leaf Essent. Oil | -- | 28000.0 | | Jim Duke's personal files. |
|---------------|------------------------|----|---------|--|----------------------------|

| | | | | | |
|---------------|------------------|----|------|--|--|
| NERYL-FORMATE | Essential Oil | -- | 20.0 | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------------|------------------|----|------|--|--|

Activities (2)

| | |
|------------------|---|
| FLavor FEMA 5-15 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|--------|-------|------|------|-------|---|
| NIACIN | Fruit | 10.0 | 19.0 | -0.56 | * |
|--------|-------|------|------|-------|---|

Activities (39)

| | |
|----------------------------------|---|
| Allergenic | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| AntiLyme 50 mg/day | |
| AntiMeniere's | Duke, J. A. Write ups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| AntiRaynaud's 1,500-4,000 mg/day | |
| AntiAcrodynic | |
| AntiAllergic 50 mg/2x/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| AntiAlzheimeran | |
| Antiamblyopic | |
| Antiangular | |

| | |
|--------------------------------------|---|
| Antichilblain | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Anticonvulsant 3 g/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antidementia | |
| Antidermatitic | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp. |
| Antidiabetic | |
| Antidysphagic | |
| Antiepileptic 3 g/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antihangover 50 mg | |
| Antihistaminic 50 mg 2x/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antihyperactivity 1.5-6 g/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antiinsomnic 1 g/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antineuragic | |
| Antiparkinsonian 100 mg/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antipellagric | Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp. |
| Antiscotomic | |
| Antispasmodic 100 mg 2x/day | Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp. |
| Antivertigo | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardioprotective | |
| Circulotonic | |
| Fibrinolytic | |
| Hepatoprotective | |
| Hepatotoxic | |
| Hypocholesterolemic 50-100 mg 3x/day | |
| Hypoglycemic | |
| Hypolipidemic | |
| Sedative | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Serotonergic | Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Vasodilator | Martindale's 29th |

NOBILETIN Pericarp -- -- Jim Duke's personal files.

Activities (8)

| | |
|-------------------------------|--|
| Antiallergic | |
| Antihistaminic ED=50 mg/kg | |
| Antiproliferative IC70=8ug/ml | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cholinergic | |
| Fungicide | |
| Fungistat | Weidenborner, M., Hindorf, H., Jha, H.C., and Tsotsonos, P. 1989. Antifungal Activity of Flavonoids Against Storage Fungi of the Genus Aspergillus. <i>Phytochemistry.</i> 29(4): 1103-1105. |
| Pesticide | |

NOMILIN Sprout -- -- Jim Duke's personal files.

Activities (2)

| | |
|-------------|---|
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents,</i> CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide | |

NOMILIN Seed -- -- Jim Duke's personal files.

Activities (2)

| | |
|-------------|---|
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents,</i> CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide | |

NOMILIN-17-O-BETA-D-GLUCOPYRANOSIDE Seed -- -- Jim Duke's personal files.

NOMILIN-17-O-BETA-D-GLUCOSIDE Seed -- -- Jim Duke's personal files.

NOMILINIC-ACID-17-O-BETA-D-GLUCOSIDE Seed -- -- Jim Duke's personal files.

NOMILINIC-ACID-4-BETA-D-GLUCOSIDE Pericarp -- 9.8 Jim Duke's personal files.

NONAN-1-AL Essential Oil 3.0 7.0 Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.*

NONAN-1-AL Pericarp -- -- Jim Duke's personal files.

| | | | | |
|----------------|------------------------|-----|---------|--|
| NONAN-1-OL | Leaf Essent. Oil | -- | 14000.0 | Jim Duke's personal files. |
| NONANAL | Petiole | -- | 1.5 | * |
| NONANAL | Essential Oil | 9.0 | 30.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| NONANOL | Petiole | -- | -- | * |
| NONYL-ACETATE | Plant | -- | -- | * |
| NONYL-ALDEHYDE | Essential Oil | -- | -- | * |
| NOOTKATONE | Tissue Culture | -- | -- | Jim Duke's personal files. |

Activities (3)

| | |
|----------------------------|---|
| Antiulcer 20 mg/kg orl rat | Yamahara, J., Li, Y.H., and Tamai, Y. 1990. Anti-ulcer Effect in Rats of Bitter Cardamon Constituents. <i>Chem. Pharm. Bull.</i> 38(11): 3053-3054, 1990. |
| FLavor FEMA 3-50 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|------------|------------------|----|-----|--|
| NOOTKATONE | Essential Oil | -- | 1.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|------------|------------------|----|-----|--|

Activities (3)

| | |
|----------------------------|---|
| Antiulcer 20 mg/kg orl rat | Yamahara, J., Li, Y.H., and Tamai, Y. 1990. Anti-ulcer Effect in Rats of Bitter Cardamon Constituents. <i>Chem. Pharm. Bull.</i> 38(11): 3053-3054, 1990. |
| FLavor FEMA 3-50 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|------------|-------|----|----|---|
| NOOTKATONE | Plant | -- | -- | * |
|------------|-------|----|----|---|

Activities (3)

| | |
|----------------------------|---|
| Antiulcer 20 mg/kg orl rat | Yamahara, J., Li, Y.H., and Tamai, Y. 1990. Anti-ulcer Effect in Rats of Bitter Cardamon Constituents. <i>Chem. Pharm. Bull.</i> 38(11): 3053-3054, 1990. |
| FLavor FEMA 3-50 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|------------|---------|----|----|---|
| NOOTKATONE | Petiole | -- | -- | * |
|------------|---------|----|----|---|

Activities (3)

| | |
|----------------------------|---|
| Antiulcer 20 mg/kg orl rat | Yamahara, J., Li, Y.H., and Tamai, Y. 1990. Anti-ulcer Effect in Rats of Bitter Cardamon Constituents. <i>Chem. Pharm. Bull.</i> 38(11): 3053-3054, 1990. |
| FLavor FEMA 3-50 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|----------------|------------------|----|----|--|
| O-PHENYLPHENOL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|----------------|------------------|----|----|--|

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|-----------|------|----|----|----------------------------|
| OBACUNONE | Seed | -- | -- | Jim Duke's personal files. |
|-----------|------|----|----|----------------------------|

Activities (3)

| | |
|----------------|--|
| Anticataleptic | |
| Antifeedant | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Pesticide | |

| | | | | |
|---------------------------------------|------|----|----|----------------------------|
| OBACUNONE-17-O-BETA-D-GLUCOPYRANOSIDE | Seed | -- | -- | Jim Duke's personal files. |
|---------------------------------------|------|----|----|----------------------------|

| | | | | |
|---------------------------------|------|----|----|----------------------------|
| OBACUNONE-17-O-BETA-D-GLUCOSIDE | Seed | -- | -- | Jim Duke's personal files. |
|---------------------------------|------|----|----|----------------------------|

| | | | | |
|---------|------------------------|----|----|----------------------------|
| OCIMENE | Leaf Essent. Oil | -- | -- | Jim Duke's personal files. |
|---------|------------------------|----|----|----------------------------|

Activities (2)

| | |
|-------------|---|
| Insecticide | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|------------|----------|----|----|----------------------------|
| OCTAN-1-AL | Pericarp | -- | -- | Jim Duke's personal files. |
|------------|----------|----|----|----------------------------|

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|---------|---------|----|-----|---|
| OCTANAL | Petiole | -- | 2.0 | * |
|---------|---------|----|-----|---|

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|---------------|------------------|----|----|--|
| OCTANOIC-ACID | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|---------------|------------------|----|----|--|

| | |
|------------------|---|
| Candidicide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| FLavor FEMA 3-20 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Perfumery | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Pesticide | |

| | | | | |
|----------------|---------------|------|------|---|
| OCTANOL | Essential Oil | 10.0 | 15.0 | Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i> |
| OCTANOL | Petiole | -- | 2.0 | * |
| OCTOPAMINE | Leaf | -- | -- | List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6,</i> Springer-Verlag, Berlin, 1969-1979. |
| OCTYL-ACETATE | Essential Oil | -- | -- | Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i> |
| OCTYL-ALDEHYDE | Essential Oil | -- | -- | * |
| OSTHOL | Root | -- | -- | Jim Duke's personal files. |

Activities (15)

| | |
|---------------------------------------|--|
| 5-Lipoxygenase-Inhibitor | |
| Analgesic | |
| Antiallergic | |
| Antiinflammatory IC62 800 ppm orl | |
| Antimalarial IC50=25.1 ug/ml | Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. <i>Journal of Ethnopharmacology</i> , 15: 201-209, 1986. |
| Antimitotic 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Antimutagenic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Calcium-Antagonist IC50=4 ug/ml | |
| Calcium-Antagonist 40 uM rat | |
| Calcium-Antagonist 100 uM | |
| Cancer-Preventive 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Immunosuppressant | |
| Juvabional | |
| Pesticide | |
| Xanthine-Oxidase-Inhibitor IC10=10 uM | |

| | | | | |
|---------|------|----|----|---|
| OSTHOLE | Root | -- | -- | * |
|---------|------|----|----|---|

Activities (4)

| | |
|--------------------|--|
| Antimalarial | |
| Calcium-Antagonist | |
| Juvabional | |
| Pesticide | |

| | | | | |
|---------------|---------------|----|-------|---|
| OXYPEUCEDANIN | Essential Oil | -- | 207.0 | * |
|---------------|---------------|----|-------|---|

Activities (6)

| | |
|-----------------------------------|---|
| Antitumor-Promoter IC32=50 ug/ml | |
| Calcium-Antagonist IC50=1.2 ug/ml | |
| DME-Inhibitor IC50=81 uM | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Fungicide MIC=10 ug | |
| Lipolytic | |
| Mutagenic | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp. |

| | | | | |
|---------------|-------------------|----|----|----------------------------|
| OXYPEUCEDANIN | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |
|---------------|-------------------|----|----|----------------------------|

Activities (6)

| | |
|----------------------------|--|
| Antitumor-Promoter IC32=50 | |
|----------------------------|--|

| | |
|-----------------------------------|---|
| Calcium-Antagonist IC50=1.2 ug/ml | |
| DME-Inhibitor IC50=81 uM | Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134. |
| Fungicide MIC=10 ug | |
| Lipolytic | |
| Mutagenic | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |

| | | | | |
|-----------------------|---------------|----|------|--|
| OXYPEUCEDANIN-HYDRATE | Essential Oil | -- | 64.0 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|-----------------------|---------------|----|------|--|

Activities (2)

Antihistaminic 25 mg/kg ipr mus

Calcium-Antagonist

| | | | | |
|-------------------------|-------|----|----|---|
| P-ALPHA-DIMETHYLSTYRENE | Plant | -- | -- | * |
|-------------------------|-------|----|----|---|

Activities (24)

| | |
|--|---|
| Aldose-Reductase-Inhibitor 4 ug/ml (weak activity) | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110. |
| Allelopathic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antibacterial | <i>Pharmazie</i> , 46: 156, 1991. |
| Anticlastogen | |
| Antifertility | |
| Antihepatotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antileukemic IC50=25-56 ug/ml | Chiang, L.C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46. |
| Antinitrosaminic | Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY. |
| Antioxidant IC24=30 ppm | |
| Antioxidant 1/3 BHA | |
| Antiperoxidant IC50=>100 uM | <i>Planta Medica</i> , 57: A54, 1991. |
| Antiseptic | |
| Antispasmodic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Antitumor | |
| Cancer-Preventive | |
| Chemopreventive | |
| Choleretic | |
| Cytotoxic | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Diaphoretic? | <i>Lawrence Review of Natural Products</i> , Dec-90. |
| Fungicide | Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp. |
| Lipoxygenase-Inhibitor IC11=5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690. |
| Pesticide | |
| Prostaglandinogenic | |
| Prostaglandin-Synthesis-Inhibitor | |
| Tyrosinase-Inhibitor ID50=3,650 uM | |

| | | | | | |
|----------|---------------|------|------|-------|---|
| P-CYMENE | Essential Oil | 12.0 | 31.0 | -0.63 | * |
|----------|---------------|------|------|-------|---|

Activities (16)

| | |
|--------------------------------------|--|
| Analgesic | Martindale's 28th |
| Antiacetylcholinesterase IC40=1.2 mM | |
| Antibacillary | |
| Antibacterial | |
| Antiflu | |
| Antirheumatalgic | Martindale's 28th |
| Antiviral | |
| FLavor FEMA 12-250 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Herbicide IC50=50 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Laxative | Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |

| | | | | | |
|----------------------------------|--|--|--|--|--|
| Pesticide | | | | | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. | | | | |
| Trichomonicide LD100=50 ug/ml | | | | | |

| | | | | |
|----------|----------------------------|----|----|----------------------------|
| P-CYMENE | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
|----------|----------------------------|----|----|----------------------------|

Activities (16)

| | |
|--|--|
| Analgesic | Martindale's 28th |
| Antiacyetylcholinesterase IC40=1.2 mM | |
| Antibacillary | |
| Antibacterial | |
| Antiflu | |
| Antirheumatalgic | Martindale's 28th |
| Antiviral | |
| FLavor FEMA 12-250 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Herbicide IC50=50 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide LD100=50 ug/ml | |

| | | | | |
|----------|---------|----|-----|---|
| P-CYMENE | Petiole | -- | 7.5 | * |
|----------|---------|----|-----|---|

Activities (16)

| | |
|--|--|
| Analgesic | Martindale's 28th |
| Antiacyetylcholinesterase IC40=1.2 mM | |
| Antibacillary | |
| Antibacterial | |
| Antiflu | |
| Antirheumatalgic | Martindale's 28th |
| Antiviral | |
| FLavor FEMA 12-250 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Herbicide IC50=50 uM | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Laxative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Trichomonicide LD100=50 ug/ml | |

| | | | | | |
|----------|------------------------|--------|---------|-------|----------------------------|
| P-CYMENE | Leaf Essent. Oil | 4100.0 | 20000.0 | -0.48 | Jim Duke's personal files. |
|----------|------------------------|--------|---------|-------|----------------------------|

Activities (16)

| | |
|--|--|
| Analgesic | Martindale's 28th |
| Antiacyetylcholinesterase IC40=1.2 mM | |
| Antibacillary | |
| Antibacterial | |
| Antiflu | |
| Antirheumatalgic | Martindale's 28th |
| Antiviral | |
| FLavor FEMA 12-250 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |

| | |
|----------------------------------|--|
| Insectifuge | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. |
| Irritant | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Laxative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253. |
| Trichomonicide LD100=50 ug/ml | |

| | | | | |
|--------------------------------|-------------------|----|----|--|
| P-CYMOL | Essential Oil | -- | -- | * |
| P-MENTHA-1,8-DIEN-9-YL-ACETATE | Essential Oil | -- | -- | Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980</i> . |
| P-MENTHA-2,8-DIEN-1-OL | Essential Oil | -- | -- | * |
| PABULENOL | Fruit Essent. Oil | -- | -- | Jim Duke's personal files. |

Activities (1)

Antitumor-Promoter IC37=50 ug/ml

| | | | | |
|--------|---------|----|----|----------------------------|
| PE | Plant | -- | -- | * |
| PECTIN | Exocarp | -- | -- | Jim Duke's personal files. |

Activities (24)

| | |
|-------------------------------|--|
| Antiatheromic 15 g/man/day | Cerda, J.J. <i>Pectin in Health and Disease</i> . HortScience, 25(12): 1485, 1990. |
| Antibacterial | |
| Antidiabetic 10 g/man/day/orl | |
| Antidiarrheic | Merck 11th Edition |
| Antienteric | |
| Antigallstone | |
| Antigastritic | |
| Antilithic | |
| Antimetastatic | |
| Antimutagenic | |
| Antiobesity | Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY. |
| Antitumor (Colon) | |
| Antitumor (Prostate) | |
| Antitussive | |
| Antiulcer | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Chemopreventive | |
| Demulcent | |
| Fungicide | Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Hemostat | |
| Hypocholesterolemic | |
| Hypoglycemic | Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY. |
| Peristaltic | |
| Pesticide | |

| | | | | |
|--------|----------|----|----|---|
| PECTIN | Pericarp | -- | -- | * |
|--------|----------|----|----|---|

Activities (24)

| | |
|-------------------------------|--|
| Antiatheromic 15 g/man/day | Cerda, J.J. <i>Pectin in Health and Disease</i> . HortScience, 25(12): 1485, 1990. |
| Antibacterial | |
| Antidiabetic 10 g/man/day/orl | |
| Antidiarrheic | Merck 11th Edition |
| Antienteric | |
| Antigallstone | |
| Antigastritic | |
| Antilithic | |
| Antimetastatic | |
| Antimutagenic | |
| Antiobesity | Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY. |

| | | | | | |
|------------------------------------|---|-------|--------|-------|--|
| Antitumor (Prostate) | | | | | |
| Antitussive | | | | | |
| Antiulcer | | | | | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. | | | | |
| Chemopreventive | | | | | |
| Demulcent | | | | | |
| Fungicide | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. | | | | |
| Hemostat | | | | | |
| Hypocholesterolemic | | | | | |
| Hypoglycemic | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY. | | | | |
| Peristaltic | | | | | |
| Pesticide | | | | | |
| PENTADECANAL | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| PENTADECANE | Plant | -- | -- | | * |
| PERILLALDEHYDE | Fruit | -- | -- | | * |
| Activities (11) | | | | | |
| Acaricide | | | | | |
| Antibacterial MIC=500->1,000 ug/ml | | | | | |
| Antimelanomic IC50=120 uM/l | | | | | |
| Antiproliferative | | | | | |
| Antiseptic | | | | | |
| Candidicide MIC=500 ug/ml | | | | | |
| Fungicide MIC=250-500 ug/ml | | | | | |
| Mutagenic | | | | | |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. | | | | |
| Sedative | | | | | |
| Vibriocide 250 ug/ml | Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin. | | | | |
| PHELLOPTERIN | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| Activities (2) | | | | | |
| Calcium-Antagonist | | | | | |
| Lipolytic | | | | | |
| PHELLOPTERIN | Fruit Essent. Oil | -- | -- | | Jim Duke's personal files. |
| Activities (2) | | | | | |
| Calcium-Antagonist | | | | | |
| Lipolytic | | | | | |
| PHLORIN | Plant | -- | -- | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| PHOSPHORUS | Fruit | 100.0 | 1979.0 | -0.38 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| Activities (4) | | | | | |
| Antiosteoporotic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | |
| Anxiolytic | | | | | |
| Immunostimulant | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | |
| Osteogenic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | | | |
| PHYSTOSTEROLS | Fruit | -- | 120.0 | -1.06 | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) |
| Activities (2) | | | | | |
| Antiprostatotatic | | | | | |

| | | | | |
|--|--------|---|----------|---|
| PONCIRIN | Plant | -- | -- | * |
| POTASSIUM | Fruit | -- | 14700.0 | -0.28 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| Activities (14) | | | | |
| Angiotensin-Receptor-Blocker | | | | |
| Antiarrhythmic | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Antidepressant | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Antifatigue | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Antihypertensive | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Antispasmodic | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Antistroke | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Anxiolytic | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Beta-Blocker | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Cardioprotective 3,000-5,000 mg | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Cardiotoxic 18,000 mg/man/day | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Diuretic | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Hypotensive | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| Vasodilator | | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. | | |
| PROTEIN | Fruit | 10000.0 | 111000.0 | 0.02 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| QUERCETIN | Flower | -- | -- | * |
| Activities (176) | | | | |
| 11B-HSD-Inhibitor | | | | |
| 5-Lipoxygenase-Inhibitor | | | | |
| IC50 (μ M)=4 | | | | |
| ATPase-Inhibitor | | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | |
| Aldehyde-Oxidase-Inhibitor IC70-96=10 μ M | | | | |
| Aldose-Reductase-Inhibitor 100 μ M | | | | |
| Aldose-Reductase-Inhibitor 4 ug/ml | | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110. | | |
| Aldose-Reductase-Inhibitor IC50=0.84 ug/ml cow | | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 | | |
| Aldose-Reductase-Inhibitor IC50=0.344 μ M | | Mao, X. M., Zhang, J. Q. 1993. Inhibition of Aldose Reductase by Extracts of Chinese Herbal Medicine. <i>Zhongguo Zhongyao Zazhi</i> , 18(10): 623-624. | | |
| Allelochemical IC82=1 mM | | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. | | |
| Allergenic | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | |
| Analgesic | | | | |
| AntiCrohn's 400 mg/man/3x/day | | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | |
| AntiGTF ID50=120 ug/ml | | | | |
| AntiHIV | | | | |
| AntiPMS 500 mg/2x/day/wmn | | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). | | |
| Antiaflatoxin IC50=25 μ M | | | | |
| Antiaflatoxin IC50=7.5 ppm | | | | |
| Antiaggregant IC50=55 μ M | | Economic & Medicinal Plant Research, 5: 333. | | |
| Antiaggregant 30 μ M | | | | |
| Antiaging | | | | |
| Antiallergic IC50=14 μ M | | Jim Duke's personal files. | | |
| Antialzheimeran | | | | |
| Antianaphylactic | | Meli, R., Autore, G., Di Carlo, G., Capasso, F. Inhibitory Action of Quercetin on Intestinal Transit in Mice. <i>Phytotherapy Research</i> 4(5): 201, 1990. | | |
| Antiangiogenic | | | | |
| Antiarthritic | | | | |
| Antiasthmatic IC50=14 μ M | | | | |
| Antiatherosclerotic | | | | |
| Antibacterial | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | |
| Anticarcinomic (Breast) IC50=1.5 μ M | | Medline (post 1990 searches filed in my computer) | | |
| Anticariogenic ID50=120 ug/ml | | | | |
| Anticataract | | | | |

mg/day

Anticomplementary

Anticystitic 1,000
mg/day/4 weeks

Antidepressant

Antidermatitic Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antidiabetic

Antielastase IC50=0.8
ug/ml

Antiecephalitic Economic & Medicinal Plant Research, 5: 199.

Antiescherichic

Antiestrogenic

Antifeedant IC52=<1,000 ppm diet Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.

Antifibrosarcomic

Antiflu Vlietinck, A.J. and Dommisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.

Antigastric Rastitel'nye Resursy, 21: 85.

Antigonadotropic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Antihepatotoxic Joyeux, M., Rolland, A., Fleurentin, J., Mortier, F., and Dorfman, P. 1989. Tert-Butyl Hydroperoxide-Induced Injury in Isolated Rat Hepatocytes: A Model for Studying Anti-Hepatotoxic Crude Drugs. *Planta Medica* 56(2): 171-173, 1990.Antiherpetic 48-150
ug/ml

Antihistaminic IC50=<10 uM

Antihydrophobic Vlietinck, A.J. and Dommisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.

Antihypertensive Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

Antiinflammatory 20-150
mg/kg Fitoterapia No.5-1990.

Antileishmanic IC50=64

Antileukemic IC50=10 uM Economic & Medicinal Plant Research, 5: 225.

Antileukemic IC50=>10 ug/ml Life Sciences 55: 1061.

Antileukemic 5.5-60 uM

Antileukotriene Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antilipoperoxidant
IC67=50

Antimalarial IC50=1-6.4 ug/ml Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.

Antimelanomic

Antimetastatic

Antimutagenic ID50=2-5 nM Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.

Antimutagenic ID50=0.62 ug/ml

Antimyocarditic Economic & Medicinal Plant Research, 5: 199.

Antinitrosaminic

Antinociceptive

Antioxidant IC96=300 ppm Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.

Antioxidant ED50=2.3 uM Seidel, V., Verholle, M., Malard, Y., Tillequin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from *Ballota nigra* L. Inhibit in vitro LDL Peroxidation. *Phytotherapy Research*, 14(2): 93-98.

Antioxidant 4.7 x Vit. E

Antioxidant IC47=10 uM

Antipancreatic Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.

Antiperiodontal Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiperistaltic

Antipermeability

Antiperoxidant *Planta Medica*, 57: A110, 1991.

Antipharyngitic Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiplaque Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiplasmodial IC50=13-
64

Antipodriac Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antipolio

Antiproliferant 10 nM Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiprostanoid

Antiprostatitic Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.

Antipsoriac Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiradicular IC50=4.6 uM *Planta Medica*, 56(6): 695, 1990.

Antispasmodic

Antistreptococcic
ID50=120 ug/ml

Antithiamin Phenolic Compounds in Food and Their Effects on Health, 69.

Antithrombic

| | |
|---|---|
| Antitumor 10 uM | |
| Antitumor (Bladder) | |
| Antitumor (Breast) | |
| Antitumor (Colon) | |
| Antitumor (Lung) | |
| Antitumor (Ovary) | |
| Antitumor (Skin) 20 uM | |
| Antitumor-Promoter | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Antiulcer | |
| Antiviral IC50=10 uM | Economic & Medicinal Plant Research, 5: 225. |
| Antiviral 48-150 ug/ml | Amoros, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. <i>J. of Natural Products</i> 55(12):1732-1740, 1992. |
| Apoptotic 20-60 uM | |
| Bacteristat 10 mg/ml | |
| Bradycardiac | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| COMT-Inhibitor | |
| COX-2-Inhibitor <40 uM | |
| Calmodulin-Antagonist | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Candidicide | |
| Capillariprotective | Merck 11th Edition |
| Carcinogenic 40,000 ppm (diet) mus | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Catabolic | |
| Copper-Chelator | |
| Cyclooxygenase-Inhibitor | |
| Cytochrome-P450-1A2-Inhibitor | |
| Cytotoxic ED50=70 ug/ml | Matsukawa, Y., et al. The Effect of Quercetin and Other Flavonoids on Cell Cycle Progression and Growth of Human Gastric Cancer Cells. <i>Planta Medica</i> , 56(6): 677, 1990. |
| Cytotoxic IC82=100 ug/ml | <i>Planta Medica</i> , 57: A113, 1991. |
| Deiodinase-Inhibitor | Jim Duke's personal files. |
| Diaphoretic? | Lawrence Review of Natural Products, Dec-90. |
| Differentiator 5.5 uM | |
| Estrogenic 10% genistein | |
| Fungicide | |
| Glucosyl-Transferase-Inhibitor ID50=120 ug/ml | |
| HIV-RT-Inhibitor IC50=<1 ug/ml | Nakane, H., Fukushima, M., and Ono*, K. Differential Inhibition Of Reverse Transcriptase And Various DNA Polymerases By Digallic Acid And Its Derivatives. <i>Journal of Natural Products</i> , 53(5): 1234-1240, 1990. |
| Hemostat | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Hepatomagenic 5,000 ppm (diet) rat | Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Hepatoprotective | |
| Hypoglycemic 100 mg/kg or/rat | Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989. |
| Inotropic | |
| Insulinogenic | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| Juvabional | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Larvistat 8,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Lipoxygenase-Inhibitor IC11=1.25 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690. |
| Lipoxygenase-Inhibitor IC50=0.1-5 uM | |
| MAO-A-Inhibitor | |
| MMP-9-Inhibitor 20 uM | |
| Mast-Cell-Stabilizer | |
| Metal-Chelator (Copper) | Seidel, V., Verholle, M., Malard, Y., Tillequin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98. |
| Metalloproteinase-Inhibitor IC50=>42 uM | |
| Mutagenic | |
| NADH-Oxidase-Inhibitor | |
| NEP-Inhibitor IC50=>42 uM | |
| NF-kB-Inhibitor | |
| NO-Inhibitor IC>50=125 uM | |
| NO-Inhibitor IC50=20 uM | |
| NO-Synthase-Inhibitor 5-50 uM | |
| Neuroprotective 5-25 uM | |

| | |
|---|---|
| Decarboxylase-Inhibitor <10 uM | |
| P450-Inducer 5 uM | Father Nature's Farmacy: The aggregate of all these three-letter citations. |
| P450-Inhibitor 50-100 uM | Father Nature's Farmacy: The aggregate of all these three-letter citations. |
| PGE2-Inhibitor | |
| PTK-Inhibitor 0.4-24 uM | |
| Pesticide | |
| Phospholipase-Inhibitor | |
| Plasmodicide | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Proliferant | |
| Prostaglandin-Synthesis-Inhibitor 40 ug/ml | Ibewuike, J. C., Ogungbamila, F. O., Ogundaini, A. O., Okeke, I. N., Bohlin, L. 1997. Antiinflammatory and Antibacterial Activities of C-methylflavonol from <i>Piliostigma thonningii</i> . <i>Phytotherapy Research</i> , 11(4): 281-284. |
| Protein-Kinase-C-Inhibitor | Naim, M., Zehavi, U., Nagy, S., and Rouseff, R.L. Hydroxycinnamic Acids as Off-Flavor Precursors in Citrus Fruits and Their Products. Phenolic Compounds in Food and Their Effects on Health, Ch.14. |
| Quinone-Reductase-Inducer 6 uM | Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In'Vitro by Flavonoids. <i>Cancer Lett.</i> , 120 (2): 213-216. |
| Quinone-Reductase-Inducer 13 uM | |
| TNF-alpha-Inhibitor IC50=3.11 uM | |
| Teratologic | |
| Topoisomerase-I-Inhibitor IC50=12.8 ug/ml | |
| Topoisomerase-I-Inhibitor IC50=42 uM | |
| Topoisomerase-II-Inhibitor IC50=1-6.9 ug/ml | |
| Topoisomerase-II-Inhibitor IC50=23-40 uM | |
| Tumorigenic 0.1% diet orl rat/yr | Jim Duke's personal files. |
| Tyrosinase-Inhibitor ID50=70 uM | |
| Tyrosine-Kinase-Inhibitor | Economic & Medicinal Plant Research, 6: 170. |
| VEGF-Inhibitor | |
| Vasodilator | |
| Xanthine-Oxidase-Inhibitor IC50=>0.4 ug/ml | Chem. & Pharm. Bull. 38: 1772. |
| Xanthine-Oxidase-Inhibitor IC50=10.6 ug/ml | |
| Xanthine-Oxidase-Inhibitor 3.1 uM | |
| cAMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |
| iNOS-Inhibitor IC50=20 uM | |

QUERCETIN-3,5-DIGLUCOSIDE

Plant -- -- *

RHOIFOLIN

Leaf -- -- Jim Duke's personal files.

Activities (2)

| | |
|---------------------------------------|---|
| Aldose-Reductase-Inhibitor IC32=10 uM | Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888. |
| Antiarrhythmic | Jim Duke's personal files. |

RIBOFLAVIN

Fruit 2.0 3.0 -0.43 *

Activities (15)

| | |
|--------------------------------------|---|
| AntiLyme 50 mg/day | |
| Antiarabiflavonoid 2-10 mg/day orl | Martindale's 28th |
| Anticarpal-Tunnel 50 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Anticataract 15 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. |
| Anticephalitic | |
| Anticervicaldysplastic 1.6-10 mg/day | |
| Anticheilitic | |
| Antidecubitic | |
| Antiglossitic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Antikeratitic | |
| Antimigraine | |
| Antioxidant | |
| Antipellagric | |
| Antiphotothrophic | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |

Activities (87)

| | |
|---|--|
| 5-HT-Inhibitor | |
| Aldehyde-Oxidase-Inhibitor IC27-52=10 uM | |
| Aldose-Reductase-Inhibitor 100 uM | |
| Aldose-Reductase-Inhibitor 4 ug/ml | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110. |
| Allelochemical | |
| AntiCVI 270 mg/man/day | |
| Antiaggregant ED50=33 nmol/kg iv | |
| Antiallergic | |
| Antiapoplectic | |
| Antiatherogenic | |
| Antiatherosclerotic | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Anticancer | |
| Anticapillary-Fragility 20-100 mg orl man | Merck 7th Ed. |
| Anticataract | |
| Anticlastogen | |
| Anticonvulsant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antidementia | Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp. |
| Antidermatitic | Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp. |
| Antidiabetic | Jin, G-Z., Yamagata, Y., and Tomita, K.-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990. |
| Antiedemic 270 mg/day orl man | |
| Antiyrythemic | |
| Antifeedant | |
| Antiglaucomic 60 mg/day | Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp. |
| Antihematuric | |
| Antihemorrhoidal | |
| Antihepatotoxic | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Antiherpetic | Economic & Medicinal Plant Research, 5: 198. |
| Antihistaminic | |
| Antihypertensive | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory 20 mg/kg | |
| Antimalarial IC50=>100 ug/ml | Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. <i>Journal of Ethnopharmacology</i> , 15: 201-209, 1986. |
| Antimelanomic | |
| Antimetastatic | |
| Antimutagenic ID50=2-5 nM | |
| Antinephritic | |
| Antinociceptive | |
| Antioxidant IC28=30 ppm | |
| Antioxidant IC50=120 uM | |
| Antioxidant IC54=10 uM | |
| Antiperoxidant IC50=10-20 uM | |
| Antiplatelet | |
| Antiproliferant 50-75 uM/l | |
| Antiprotozoal | |
| Antipurpuric | |
| Antiradicular 9 x quercetin | |
| Antispasmodic | |
| Antisunburn | |
| Antithrombogenic EC50=500 nM | |
| Antithyroid IC50=68 uM | |
| Antitrypanosomal 100 mg/kg | Planta Medica, 57: A44, 1991. |
| Antitumor | |
| Antitumor-Promoter | |
| Antiulcer | |
| Antivaricose | |
| Antiviral | |
| Apoptotic 75 uM/l | |

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|---|--|
| Capillariprotective | Merck 11th Edition |
| Catabolic | |
| Chemopreventive | |
| Cytoprotective IC50=3 uM | |
| Estrogenic? | Economic & Medicinal Plant Research, 6: 189. |
| Hemostat | |
| Hepatomagenic 20,000 ppm (diet) rat | Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Hepatoprotective 20 mg/kg rat | |
| Hypocholesterolemic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Hypotensive | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Immunomodulator | |
| Insecticide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectiphile | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Juvabional | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Larvistat IC95=4,000-8,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Lipoxygenase-Inhibitor IC75=2.5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690. |
| Mutagenic | Economic & Medicinal Plant Research, 6: 189. |
| Myoprotective | |
| Myorelaxant | Economic & Medicinal Plant Research, 6: 189. |
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| PAF-Inhibitor | |
| Pesticide | |
| Protisticide | |
| Radioprotective | |
| Sunscreen | |
| Topoisomerase-II-Inhibitor IC50=1 ug/ml | Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. <i>Antimicrobial Agents & Chemotherapy</i> , 41: 992-998. |
| Vasodilator | |
| Vasopressor | |
| cAMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

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|---|---|-----|-----|-------|---|
| RUTIN | Fruit | 1.0 | 2.0 | -0.65 | * |
| Activities (87) | | | | | |
| 5-HT-Inhibitor | | | | | |
| Aldehyde-Oxidase-Inhibitor IC27-52=10 uM | | | | | |
| Aldose-Reductase-Inhibitor 100 uM | | | | | |
| Aldose-Reductase-Inhibitor 4 ug/ml | Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110. | | | | |
| Allelochemic | | | | | |
| AntiCVI 270 mg/man/day | | | | | |
| Antiaggregant ED50=33 nmol/kg iv | | | | | |
| Antiallergic | | | | | |
| Antiapoplectic | | | | | |
| Antiatherogenic | | | | | |
| Antiatherosclerotic | | | | | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Anticancer | | | | | |
| Anticapillary-Fragility 20-100 mg orl man | Merck 7th Ed. | | | | |
| Anticataract | | | | | |
| Anticlastogen | | | | | |
| Anticonvulsant | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. | | | | |
| Antidementia | Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp. | | | | |
| Antidermatitic | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. | | | | |
| Antidiabetic | Jin, G-Z., Yamagata, Y., and Tomita, K.-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990. | | | | |
| Antiedemic 270 mg/day orl man | | | | | |
| Antierythemic | | | | | |
| Antifeedant | | | | | |
| Antiglaucomic 60 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | |
| Antihematuric | | | | | |

| | |
|---|--|
| Antihepatotoxic | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Antihyperglycemic | Economic & Medicinal Plant Research, 5: 198. |
| Antihistaminic | |
| Antihypertensive | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Antiinflammatory 20 mg/kg | |
| Antimalarial IC50=>100 ug/ml | Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using Plasmodium falciparum*. Journal of Ethnopharmacology, 15: 201-209, 1986. |
| Antimelanotic | |
| Antimetastatic | |
| Antimutagenic ID50=2-5 nM | |
| Antinephritic | |
| Antinociceptive | |
| Antioxidant IC28=30 ppm | |
| Antioxidant IC50=120 uM | |
| Antioxidant IC54=10 uM | |
| Antiperoxidant IC50=10-20 uM | |
| Antiplatelet | |
| Antiproliferant 50-75 uM/l | |
| Antiprotozoal | |
| Antipurpuric | |
| Antiradicular 9 x quercetin | |
| Antispasmodic | |
| Antisunburn | |
| Antithrombogenic EC50=500 nM | |
| Antithyroid IC50=68 uM | |
| Antitrypanosomic 100 mg/kg | Planta Medica, 57: A44, 1991. |
| Antitumor | |
| Antitumor-Promoter | |
| Antiulcer | |
| Antivaricose | |
| Antiviral | |
| Apoptotic 75 uM/l | |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Capillariprotective | Merck 11th Edition |
| Catabolic | |
| Chemopreventive | |
| Cytoprotective IC50=3 uM | |
| Estrogenic? | Economic & Medicinal Plant Research, 6: 189. |
| Hemostat | |
| Hepatomagenic 20,000 ppm (diet) rat | Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp. |
| Hepatoprotective 20 mg/kg rat | |
| Hypocholesterolemic | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Hypotensive | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Immunomodulator | |
| Insecticide | Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp. |
| Insectiphile | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Juvabional | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Larvistat IC95=4,000-8,000 ppm diet | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Lipoxygenase-Inhibitor IC75=2.5 mM | Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690. |
| Mutagenic | Economic & Medicinal Plant Research, 6: 189. |
| Myoprotective | |
| Myorelaxant | Economic & Medicinal Plant Research, 6: 189. |
| Oviposition-Stimulant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| PAF-Inhibitor | |
| Pesticide | |
| Protisticide | |
| Radioprotective | |
| Sunscreen | |
| Topoisomerase-II-Inhibitor IC50=1 ug/ml | Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. Antimicrobial Agents & Chemotherapy, 41: 992-998. |

| | |
|----------------------------------|--|
| Vasopressor | |
| cAMP-Phosphodiesterase-Inhibitor | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf). |

| | | | | |
|----------|----------------------------|----|----|----------------------------|
| SABINENE | Pericarp Essent. Oil | -- | -- | Jim Duke's personal files. |
|----------|----------------------------|----|----|----------------------------|

Activities (5)

| | |
|------------------|---|
| Antibacterial | |
| Antihelicobacter | |
| Antiseptic | |
| Antiulcer | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | |
|----------|---------|----|------|---|
| SABINENE | Petiole | -- | 95.0 | * |
|----------|---------|----|------|---|

Activities (5)

| | |
|------------------|---|
| Antibacterial | |
| Antihelicobacter | |
| Antiseptic | |
| Antiulcer | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|----------|------------------|------|-------|-------|---|
| SABINENE | Essential Oil | 50.0 | 175.0 | -0.59 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
|----------|------------------|------|-------|-------|---|

Activities (5)

| | |
|------------------|---|
| Antibacterial | |
| Antihelicobacter | |
| Antiseptic | |
| Antiulcer | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|----------|------------------------|----|---------|-------|----------------------------|
| SABINENE | Leaf Essent. Oil | -- | 10000.0 | -0.47 | Jim Duke's personal files. |
|----------|------------------------|----|---------|-------|----------------------------|

Activities (5)

| | |
|------------------|---|
| Antibacterial | |
| Antihelicobacter | |
| Antiseptic | |
| Antiulcer | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |

| | | | | | |
|-------------|-------|----|----|-------|---|
| SALICYLATES | Fruit | -- | -- | -0.34 | * |
|-------------|-------|----|----|-------|---|

Activities (7)

| | |
|------------------|--|
| Antiaggregant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antiinflammatory | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antipyretic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Antiuricosuric | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Hyperglycemic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Hypoglycemic | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| Uricosuric | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |

| | | | | |
|-----------|------|----|----|----------------------------|
| SCOPARONE | Leaf | -- | -- | Jim Duke's personal files. |
|-----------|------|----|----|----------------------------|

Activities (22)

| | |
|---|--|
| Aldose-Reductase-Inhibitor 10 ug/ml cow | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |
| Analgesic | |
| Antiatherogenic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY, NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antihepatotoxic | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| Antiimplantation | |
| Antiinflammatory | |
| Antiischemic | |

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|---------------------------------|---|
| Antiradicular | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiretinopathic | |
| Antispasmodic | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| CNS-Depressant 40-80 mg/kg ipr | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Cardiac | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cholagogue | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Choleretic | |
| Hepatoprotective | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Hypocholesterolemic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Hypotensive 5-20 mg/kg ivn | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Immunosuppressant 10-30 μ M | |
| Myorelaxant | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Tranquilizer | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Vasodilator | |

SCOPARONE Bark -- 162.5 Jim Duke's personal files.

Activities (22)

| | |
|--|---|
| Aldose-Reductase-Inhibitor 10 μ g/ml cow | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |
| Analgesic | |
| Antiatherogenic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Ant hepatotoxic | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| Antiimplantation | |
| Antiinflammatory | |
| Antiischemic | |
| Antiproliferant | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiradicular | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiretinopathic | |
| Antispasmodic | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| CNS-Depressant 40-80 mg/kg ipr | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Cardiac | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Cholagogue | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Choleretic | |
| Hepatoprotective | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Hypocholesterolemic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Hypotensive 5-20 mg/kg ivn | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Immunosuppressant 10-30 μ M | |
| Myorelaxant | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Tranquilizer | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Vasodilator | |

SCOPOLETIN Shoot -- -- Jim Duke's personal files.

Activities (44)

| | |
|--|---|
| Aldose-Reductase-Inhibitor IC50=6.2 μ g/ml cow | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |
| Allelochemical IC89=2 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Analgesic | |
| Anesthetic | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Antiadrenergic | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Antiaflatoxin IC50=65 μ M | |
| Antiaflatoxin 11.4 ppm | |
| Antiarrhythmic | |
| Antiasthmatic | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antibronchoconstrictor | |
| Anticholinergic | |

| | |
|---------------------------------|--|
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Antihepatotoxic | Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp. |
| Antiinflammatory ED 1-10 ug/ear | |
| Antileukotrienic | |
| Antimutagenic | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh. |
| Antioxidant | |
| Antiproliferant | |
| Antiprostaglandin | |
| Antiseptic | |
| Antispasmodic | |
| Antitumor 2.9 ug/ml | |
| Apoptotic | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| CNS-Depressant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| CNS-Stimulant | Watt, J.M. and Breyer-Brandwijk, M.G. 1962. <i>The Medicinal and Poisonous Plants of Southern and Eastern Africa</i> . E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp. |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cholagogue | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Choleretic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Cytotoxic | |
| Fungicide 2 mM | |
| Hepatoprotective | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Herbicide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Hypoglycemic | Economic & Medicinal Plant Research, 6: 165 |
| Hypotensive | |
| MAO-Inhibitor | |
| Musculotropic | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Myorelaxant | |
| Pesticide | |
| Phytoalexin | |
| Phytohormonal | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Uterosedative | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |

SCOPOLETIN Leaf -- -- Jim Duke's personal files.

Activities (44)

| | |
|---|--|
| Aldose-Reductase-Inhibitor IC50=6.2 ug/ml cow | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |
| Allelochemical IC89=2 mM | Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Analgesic | |
| Anesthetic | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp. |
| Antiadrenergic | Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp. |
| Antiaflatoxin IC50=65 uM | |
| Antiaflatoxin 11.4 ppm | |
| Antiarrhythmic | |
| Antiasthmatic | |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Antibronchoconstrictor | |
| Anticholinergic | |
| Antiedemic | |
| Antifeedant | Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Antihepatotoxic | Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp. |
| Antiinflammatory ED 1-10 ug/ear | |
| Antileukotrienic | |
| Antimutagenic | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh. |
| Antioxidant | |
| Antiproliferant | |
| Antiprostaglandin | |
| Antiseptic | |
| Antispasmodic | |
| Antitumor 2.9 ug/ml | |
| Apoptotic | |
| Bronchorelaxant | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |

| | |
|-------------------|---|
| CNS-Stimulant | Watt, J.M. and Breyer-Brandwijk, M.G. 1962. <i>The Medicinal and Poisonous Plants of Southern and Eastern Africa</i> . E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp. |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cholagogue | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft mbH Stuttgart. 393 pp. |
| Choleretic | Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp. |
| Cytotoxic | |
| Fungicide 2 mM | |
| Hepatoprotective | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft mbH Stuttgart. 393 pp. |
| Herbicide | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Hypoglycemic | Economic & Medicinal Plant Research, 6: 165 |
| Hypotensive | |
| MAO-Inhibitor | |
| Musculotropic | Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft mbH Stuttgart. 393 pp. |
| Myorelaxant | |
| Pesticide | |
| Phytoalexin | |
| Phytohormonal | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp. |
| Uterosedative | Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |

| | | | | |
|----------|---------------|----|----|--|
| SELINENE | Essential Oil | -- | -- | Lawrence, B.M., <i>Essential Oils 1976-1977</i> , <i>Essential Oils 1978, Essential Oils 1979-1980</i> . |
|----------|---------------|----|----|--|

Activities (1)

Expectorant

| | | | | |
|---------|------|----|----|----------------------------|
| SESELIN | Leaf | -- | -- | Jim Duke's personal files. |
|---------|------|----|----|----------------------------|

Activities (3)

Antileukemic IC50=17.3 ug/ml

Fungicide

Pesticide

| | | | | |
|---------|------|----|----|----------------------------|
| SESELIN | Root | -- | -- | Jim Duke's personal files. |
|---------|------|----|----|----------------------------|

Activities (3)

Antileukemic IC50=17.3 ug/ml

Fungicide

Pesticide

| | | | | | |
|--------------|-------|------|------|------|---|
| SINAPIC-ACID | Fruit | 14.0 | 18.0 | 0.63 | * |
|--------------|-------|------|------|------|---|

Activities (9)

Antibacterial Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antihepatotoxic Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antioxidant IC27=30 ppm

Antiperoxynitrite IC39=5 uM

Antiperoxynitrite IC60=20 uM

Antiperoxynitrite IC75=100 uM

Cancer-Preventive Stitt, P. A. *Why George Should Eat Broccoli*. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Fungicide Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Pesticide

| | | | | | |
|--------|-------|----|-------|-------|---|
| SODIUM | Fruit | -- | 470.0 | -0.14 | Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing, Bountiful, Utah. 377 pp. |
|--------|-------|----|-------|-------|---|

Activities (1)

Hypertensive Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

| | | | | |
|-------------|-------|----|----|---|
| STACHYDRINE | Plant | -- | -- | * |
|-------------|-------|----|----|---|

Activities (6)

Cardiotonic

Emmenagogue Lawrence Review of Natural Products, Mar-91.

| | |
|---------------------|--|
| Lactagogue | Lawrence Review of Natural Products, Mar-91. |
| Oxytocic? | |
| Systolic-Depressant | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

| | | | | | |
|--------------|-------|----|------|-------|--|
| STIGMASTEROL | Fruit | -- | 10.0 | -1.03 | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) |
|--------------|-------|----|------|-------|--|

Activities (12)

| | |
|---------------------------|---|
| Antihepatotoxic | |
| Antiinflammatory | Lawrence Review of Natural Products, 1995 |
| Antinociceptive | |
| Antiphidic 2.3 mg ipr mus | Economic & Medicinal Plant Research, 5: 363. |
| Antioxidant IC33=10 uM | |
| Antiviral | Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . Plant Science, 75: 161-165, 1991. |
| Artemicide LC50=110 ppm | Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . Phytochemistry, 29(5): 1667-1670. 1990. |
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Estrogenic | |
| Hypocholesterolemic | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Ovulant | |
| Sedative | |

SUBEROSIN

Root -- -- Jim Duke's personal files.

SYNEPHRINE

Leaf -- -- List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities (5)

| | |
|-----------------------------------|--|
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardiovascular 0.25 mg/kg ivn dog | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Hypertensive | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Oxytocic 2.5 mg/kg ivn mus | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Vasoconstrictor | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |

SYNEPHRINE

Pericarp -- -- Jim Duke's personal files.

Activities (5)

| | |
|-----------------------------------|--|
| Cancer-Preventive | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| Cardiovascular 0.25 mg/kg ivn dog | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Hypertensive | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |
| Oxytocic 2.5 mg/kg ivn mus | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Vasoconstrictor | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp. |

SYRINGIN

Pericarp -- -- Jim Duke's personal files.

Activities (9)

| | |
|-------------------|--|
| ACE-Inhibitor | |
| Adaptogenic | |
| Anticomplementary | |
| Antipyretic | |
| Antistress | |
| Immunomodulator | |
| Immunostimulant | |
| Neurotropic | |
| Tonic | |

TANGERETIN

Pericarp -- -- Jim Duke's personal files.

Activities (15)

| | |
|----------------------------|--|
| Antiallergic | |
| Antihistaminic ED=50 mg/kg | |
| Antilymphocytic | |

| | |
|---|---|
| Antimutagenic | |
| Antioxidant | Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp. |
| Antiproliferant IC ₇₀ =8ug/ml | |
| Apoptotic | |
| Cancer-Preventive | Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp. |
| ERK-1-Inhibitor | |
| ERK-2-Inhibitor | |
| Fungicide | |
| Hypolipidemic | |
| MDR-Inhibitor | |
| Neuroprotective | |

| | | | | | |
|---------------|---------------|-----|------|-------|---|
| TERPINEN-4-OL | Essential Oil | 1.0 | 40.0 | -0.62 | Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i> |
|---------------|---------------|-----|------|-------|---|

Activities (23)

| | |
|--|--|
| Allelopathic | Wright,C.W.(Ed)2002. <i>Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.</i> 344pp.Maffei,M.(Ed)2002. <i>Vetiveria.The Genus Vetiveria.</i> Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999. <i>Tea Tree.The Genus Melaleuca.</i> Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacyetylcholinesterase IC ₂₁₋₂₄ =1.2 mM | |
| Antiacne | |
| Antiallergic | |
| Antiasthmatic | Chin. J. Tuber. Respir. Dis., 4:203, 1982. |
| Antibacterial | |
| Antioxidant | |
| Antiseptic | Flav. & Frag. J. 9: 129. |
| Antispasmodic | |
| Antitussive | Chin. J. Tuber. Respir. Dis. |
| Antiulcer | |
| Bacteriostatic | Chin. J. Tuber. Respir. Dis. |
| Diuretic 0.1 ml/rat | |
| Fungicide | |
| Herbicide IC ₅₀ =200 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC ₅₀ =22 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | |
| Irritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Pesticide | |
| Renoirritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp. |
| Spermicide ED ₁₀₀ =0.015 | |
| Vulnerary | Lawrence Review of Natural Products, Jan-91. |

| | | | | | |
|---------------|------------------|---------|---------|-------|----------------------------|
| TERPINEN-4-OL | Leaf Essent. Oil | 29600.0 | 31000.0 | -0.29 | Jim Duke's personal files. |
|---------------|------------------|---------|---------|-------|----------------------------|

Activities (23)

| | |
|--|--|
| Allelopathic | Wright,C.W.(Ed)2002. <i>Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.</i> 344pp.Maffei,M.(Ed)2002. <i>Vetiveria.The Genus Vetiveria.</i> Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999. <i>Tea Tree.The Genus Melaleuca.</i> Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacyetylcholinesterase IC ₂₁₋₂₄ =1.2 mM | |
| Antiacne | |
| Antiallergic | |
| Antiasthmatic | Chin. J. Tuber. Respir. Dis., 4:203, 1982. |
| Antibacterial | |
| Antioxidant | |
| Antiseptic | Flav. & Frag. J. 9: 129. |
| Antispasmodic | |
| Antitussive | Chin. J. Tuber. Respir. Dis. |
| Antiulcer | |
| Bacteriostatic | Chin. J. Tuber. Respir. Dis. |
| Diuretic 0.1 ml/rat | |
| Fungicide | |
| Herbicide IC ₅₀ =200 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC ₅₀ =22 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |

| | |
|------------------------|--|
| Irritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Pesticide | |
| Renoirritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Spermicide ED100=0.015 | |
| Vulnerary | Lawrence Review of Natural Products, Jan-91. |

| | | | | |
|---------------|----------------------------|--------|---------|----------------------------|
| TERPINEN-4-OL | Pericarp Essent. Oil | 1000.0 | 11000.0 | Jim Duke's personal files. |
|---------------|----------------------------|--------|---------|----------------------------|

Activities (23)

| | |
|---|---|
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacetylcholinesterase IC21-24=1.2 mM | |
| Antiacne | |
| Antiallergic | |
| Antiasthmatic | Chin. J. Tuber. Respir. Dis., 4:203, 1982. |
| Antibacterial | |
| Antioxidant | |
| Antiseptic | Flav. & Frag. J. 9: 129. |
| Antispasmodic | |
| Antitussive | Chin. J. Tuber. Respir. Dis. |
| Antiulcer | |
| Bacteriostatic | Chin. J. Tuber. Respir. Dis. |
| Diuretic 0.1 ml/rat | |
| Fungicide | |
| Herbicide IC50=200 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=22 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | |
| Irritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Pesticide | |
| Renoirritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Spermicide ED100=0.015 | |
| Vulnerary | Lawrence Review of Natural Products, Jan-91. |

| | | | | |
|---------------|---------|----|------|---|
| TERPINEN-4-OL | Petiole | -- | 22.0 | * |
|---------------|---------|----|------|---|

Activities (23)

| | |
|---|---|
| Allelopathic | Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands. |
| Antiacetylcholinesterase IC21-24=1.2 mM | |
| Antiacne | |
| Antiallergic | |
| Antiasthmatic | Chin. J. Tuber. Respir. Dis., 4:203, 1982. |
| Antibacterial | |
| Antioxidant | |
| Antiseptic | Flav. & Frag. J. 9: 129. |
| Antispasmodic | |
| Antitussive | Chin. J. Tuber. Respir. Dis. |
| Antiulcer | |
| Bacteriostatic | Chin. J. Tuber. Respir. Dis. |
| Diuretic 0.1 ml/rat | |
| Fungicide | |
| Herbicide IC50=200 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Herbicide IC50=22 uM | Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp. |
| Insectifuge | |
| Irritant | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp. |
| Nematicide MLC=1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Pesticide | |

296pp.

Spermicide
ED100=0.015

Vulnerary Lawrence Review of Natural Products, Jan-91.

TERPINOLENE

Pericarp -- --
Essent.
Oil

Jim Duke's personal files.

Activities (9)

Allelochemical

Antifeedant

Antinitrosaminic

Antioxidant

Deodorant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

FLavor FEMA 15-60 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Fungicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

TERPINOLENE

Leaf -- --
Essent.
Oil

Jim Duke's personal files.

Activities (9)

Allelochemical

Antifeedant

Antinitrosaminic

Antioxidant

Deodorant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

FLavor FEMA 15-60 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Fungicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

TERPINOLENE

Petiole -- 26.0

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Activities (9)

Allelochemical

Antifeedant

Antinitrosaminic

Antioxidant

Deodorant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

FLavor FEMA 15-60 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Fungicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

TERPINOLENE

Essential 14.0 120.0 -0.39

Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978,
Essential Oils 1979-1980.

Activities (9)

Allelochemical

Antifeedant

Antinitrosaminic

Antioxidant

Deodorant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

FLavor FEMA 15-60 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Fungicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Pesticide

TETRADECANAL

Essential -- --

Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978,
Essential Oils 1979-1980.

| | Oil | | | Essential Oils 1979-1980. | |
|----------------------------------|--|-----|---------|--|---|
| TETRAHYDROGERANIOL | Essential Oil -- | | | 10.0 | |
| | | | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. | |
| THIAMIN | Fruit | 4.0 | 6.0 | 0.09 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| Activities (31) | | | | | |
| Analgesic 1-4 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | |
| AntiLyme 50 mg | | | | | |
| Antialcoholic 50-100 mg/day | | | | | |
| Antialzheimeran 100-3,000 mg/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | |
| Antianorectic | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Antibackache 1-4 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | |
| Antiberiberi | | | | | |
| Anticanker | | | | | |
| Anticardiospastic | | | | | |
| Anticataract | | | | | |
| Anticolic | | | | | |
| Antidecubitic | | | | | |
| Antidefriant | | | | | |
| Antidementia | | | | | |
| Antidispeptic | | | | | |
| Antinecephalopathic | Martindale's 29th | | | | |
| Antifatigue | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Antigastric | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. | | | | |
| Antihangover 50 mg | | | | | |
| Antiheartburn | | | | | |
| Antiherpetic | | | | | |
| Antimigraine | | | | | |
| Antimyocarditic | | | | | |
| Antineuragic 1-4 g/day | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | |
| Antineurasthenic | | | | | |
| Antineuritic | | | | | |
| Antineuropathic 50 mg | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp. | | | | |
| Antipoliomyelic | | | | | |
| Insectifuge 75-150 mg/man/day | Martindale's 28th | | | | |
| Neuroprotective | | | | | |
| Pesticide | | | | | |
| THYMOL | Leaf Essent. Oil | -- | 11000.0 | 1.0 | Jim Duke's personal files. |

| | | | | | |
|----------------------------------|---|--|--|--|--|
| Activities (71) | | | | | |
| Acaricide | | | | | |
| Allergenic | | | | | |
| Analgesic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. | | | | |
| Ancylostomicide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. | | | | |
| Anesthetic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. | | | | |
| Ankylostomacide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. | | | | |
| Anthelmintic | Williamson, E. M. and Evans, F. J. Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. | | | | |
| Antiacne | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. | | | | |
| Antiaggregant IC50=0.75 | Tramil, 42: 511. | | | | |
| Antialzheimeran? | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase. | | | | |
| Antiarthritic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. | | | | |
| Antiatherosclerotic IC50=4 uM | | | | | |
| Antibacterial MIC=50-400 ug/ml | | | | | |
| Antibronchitic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. | | | | |
| Anticariogenic MIC=200-400 ug/ml | | | | | |

| | |
|---|---|
| Antihalitotic | American Health, 12(4): 17, 1993. |
| Antitherapeutic | Martindale's 28th |
| Antiinflammatory (=indomethacin) | |
| Antileptic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antimelanomic IC50=120 µM/l | |
| Antineuritic | |
| Antioxidant 100 ppm | Martindale's 28th |
| Antioxidant (LDL) IC50=4 µM | |
| Antiperiodontic MIC=50-200 ug/ml | |
| Antiplaque MIC=39-625 ug/ml | Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I. Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria. Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21 |
| Antiradicular EC=60 | Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEOS: 153-8. |
| Antirheumatic | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Antisalmonella | |
| Antiseptic 20 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antispasmodic | |
| Antistaphylococcal | |
| Antistreptococcal MIC=200-400 ug/ml | |
| Antitrichinosis 5% | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antitussive | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp. |
| Ataxigenic | Zeebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Candidicide 100 ug/ml (>Nystatin) | |
| Carminative | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994. |
| Counterirritant | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Culicide LC50=36-49 mg/l | |
| Cyclooxygenase-Inhibitor (=indomethacin) | |
| Dentifrice | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Deodorant | Martindale's 28th |
| Dermatitogenic | |
| Enterorelaxant | J. Aromatherapy 4: 22. |
| Enterotoxic | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Expectorant | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| FLavor FEMA 2-100 | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Merck 11th Edition |
| Gastroirritant | Martindale's 29th |
| Gram(+)icide MIC=200-400 ug/ml | |
| Gram(-)icide MIC=50-200 ug/ml | |
| Insecticide LC50=36-49 mg/l | |
| Insecticide 0.22 uM/fly | |
| Insectifuge | |
| Irritant | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Larvicide 10 ppm | Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279. |
| Larvicide 58 ppm | |
| Larvicide LC50=36-49 mg/l | |
| Molluscicide | |
| Myorelaxant | J. Aromatherapy 4: 22. |
| Nematicide MLC=0.1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Aloe Research Council - Duke write up of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Sedative | Zeebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Sprout-Inhibitor | Duke, J.A.. Personal Communication. |
| Tracheorelaxant | |
| Trichomonicide LD100=25 ug/ml | |
| Urinary-Antiseptic | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Varroacide | |
| Vermicide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |

THYMOL Pericarp 53000.0 111000.0 Jim Duke's personal files.
 Essent. Oil

Activities (71)

| | |
|---|--|
| Acaricide | |
| Allergenic | |
| Analgesic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Ancylostomicide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Anesthetic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Ankylostomacide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Anthelmintic | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Antiacne | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Antiaggregant IC50=0.75 | Tramil, 42: 511. |
| Antialzheimeran? | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase. |
| Antiarthritic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antiatherosclerotic IC50=4 uM | |
| Antibacterial MIC=50-400 ug/ml | |
| Antibronchitic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Anticariogenic MIC=200- 400 ug/ml | |
| Anticholinesterase | L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase. |
| Antihalitotic | American Health, 12(4): 17, 1993. |
| Antiherpetic | Martindale's 28th |
| Antiinflammatory (=indomethacin) | |
| Antileptic | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antimelanomic IC50=120 uM/l | |
| Antineuritic | |
| Antioxidant 100 ppm | Martindale's 28th |
| Antioxidant (LDL) IC50=4 uM | |
| Antiperiodontic MIC=50- 200 ug/ml | |
| Antiplaque MIC=39-625 ug/ml | Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21 |
| Antiradicular EC=60 | Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEOP: 153-8. |
| Antirheumatic | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Antisalmonella | |
| Antiseptic 20 x phenol | Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176) |
| Antispasmodic | |
| Antistaphylococcc | |
| Antistreptococcc MIC=200-400 ug/ml | |
| Antitrichinosis 5% | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |
| Antitussive | Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp. |
| Ataxigenic | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Candidicide 100 ug/ml (>Nystatin) | |
| Carminative | Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994. |
| Counterirritant | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Culicide LC50=36-49 mg/l | |
| Cyclooxygenase-Inhibitor (=indomethacin) | |
| Dentifrice | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Deodorant | Martindale's 28th |
| Dermatitigenic | |
| Enterorelaxant | J. Aromatherapy 4: 22. |
| Enterotoxic | Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp. |
| Expectorant | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| FLavor FEMA 2-100 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Fungicide | Merck 11th Edition |

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|--------------------------------|--|
| Gram(+)icide MIC=200-400 ug/ml | |
| Gram(-)icide MIC=50-200 ug/ml | |
| Insecticide LC50=36-49 mg/l | |
| Insecticide 0.22 uM/fly | |
| Insectifuge | |
| Irritant | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| Larvicide 10 ppm | Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279. |
| Larvicide 58 ppm | |
| Larvicide LC50=36-49 mg/l | |
| Molluscicide | |
| Myorelaxant | J. Aromatherapy 4: 22. |
| Nematicide MLC=0.1 mg/ml | Shoyakugaku Zasshi, 44: 183. |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Sedative | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Sprout-Inhibitor | Duke, J.A.. Personal Communication. |
| Tracheorelaxant | |
| Trichomonicide LD100=25 ug/ml | |
| Urinary-Antiseptic | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Varroacide | |
| Vermicide | Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol. 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus. |

| | | | | | |
|--------------------------|------------------------|----|--------|------|--|
| TRANS-BETA-OCIMENE | Leaf Essent. Oil | -- | 7500.0 | 0.03 | Jim Duke's personal files. |
| TRANS-LIMONENE-1,2-OXIDE | Essential Oil | -- | -- | | Jim Duke's personal files. |
| TRIDECANAL | Essential Oil | -- | -- | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| TYRAMINE | Leaf | -- | -- | * | |

Activities (11)

| | |
|---------------------------------|--|
| Adrenergic | Merck 11th Edition |
| Antiaggregant | |
| Cardiovascular 0.8 ivn cat | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Cardiovascular 30 mg/kg scu mus | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Hypertensive | Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp. |
| Insectifuge | Grainge, M. and Ahmed, S., Handbook of Plants with Pest-Control Properties, John Wiley & Sons, New York, NY, 1988, 470. |
| Neurotoxic 1 mg/kg ivn dog | Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006. |
| Pesticide | |
| Sympathomimetic | |
| Vasoconstrictor | |
| Vasopressor | |

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|---------------|-------|----|----|----------------------------|
| UMBELLIFERONE | Shoot | -- | -- | Jim Duke's personal files. |
|---------------|-------|----|----|----------------------------|

Activities (22)

| | |
|---|---|
| Aldose-Reductase-Inhibitor IC50=4.8 ug/ml cow | Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387 |
| Allelochemical IC94=2 mM | Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp. |
| Antibacterial | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antiedemic | Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp. |
| Antihistaminic | |
| Antiinflammatory | |
| Antimitotic 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526. |
| Antimutagenic | Economic & Medicinal Plant Research, 6: 235. |
| Antiprostaglandin | |
| Antiseptic | |
| Antispasmodic | |

| | |
|------------------------------|--|
| Cancer-Preventive 5-25 ug/ml | Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526. |
| Candidicide | |
| Choleretic | |
| Fungicide | Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| Lipoxygenase-Inhibitor | |
| Perfumery | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |
| Pesticide | |
| Photoactive | |
| Sunscreen | Merck 11th Edition |
| Xanthine-Oxidase-Inhibitor | Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh. |

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|---------------|---------------|----|----|--|
| UMBELLIPRENIN | Shoot | -- | -- | Jim Duke's personal files. |
| UNDECANAL | Essential Oil | -- | -- | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

Activities (2)

FLavor FEMA 1-60

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

| | | | | |
|-----------|----------------|----|----|----------------------------|
| VALENCENE | Tissue Culture | -- | -- | Jim Duke's personal files. |
| VICENIN-2 | Pericarp | -- | -- | Jim Duke's personal files. |

Activities (12)

ACE-Inhibitor IC50=0.2 mM/l

Antiangiogenic

Anticancer

Anticancer (Prostate)

Anticarcinomic

Antiinflammatory ED50=148 (ipr mus)

Antiproliferant

Apoptotic

Cyclin-B1-Inhibitor

Cyclin-D1-Inhibitor

Oviposition-Stimulant

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Radioprotective

| | | | | |
|--------------|------|----|----|---|
| VIOLAXANTHIN | Leaf | -- | -- | * |
|--------------|------|----|----|---|

Activities (2)

Colorant Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Ubiquiot Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

| | | | | | |
|-------|-------|----------|----------|------|---|
| WATER | Fruit | 850000.0 | 894000.0 | 0.54 | * |
|-------|-------|----------|----------|------|---|

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|---------------|------|----|----|----------------------------|
| XANTHOXYLETIN | Root | -- | -- | Jim Duke's personal files. |
|---------------|------|----|----|----------------------------|

Activities (1)

Anticonvulsant

| | | | | |
|-------------|------|----|----|----------------------------|
| XANTHYLETIN | Root | -- | -- | Jim Duke's personal files. |
|-------------|------|----|----|----------------------------|

Activities (1)

DME-Inhibitor IC50=57.5 uM Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 134.

| | | | | |
|-----------------|--------|----|----|---|
| XYLOSYL-VITEXIN | Flower | -- | -- | * |
|-----------------|--------|----|----|---|

| | | | | |
|------------|------|----|----|---|
| ZEAXANTHIN | Leaf | -- | -- | * |
|------------|------|----|----|---|

Activities (5)

Anticancer (Breast) Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. *Plant Sci.*, 131(1): 95-103.

Antitumor (Breast) Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. *Plant Sci.*, 131(1): 95-103.

Colorant Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London.

Hepatoprotective

Quinone-Reductase-
Inducer

Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from *Vaccinium myrtillus* (Bilberry) Fruits and Cell Cultures. *Plant Sci.*, 131(1): 95-103.